CD TUNER

KDC-94R

SERVICE MANUAL

KENWOOD

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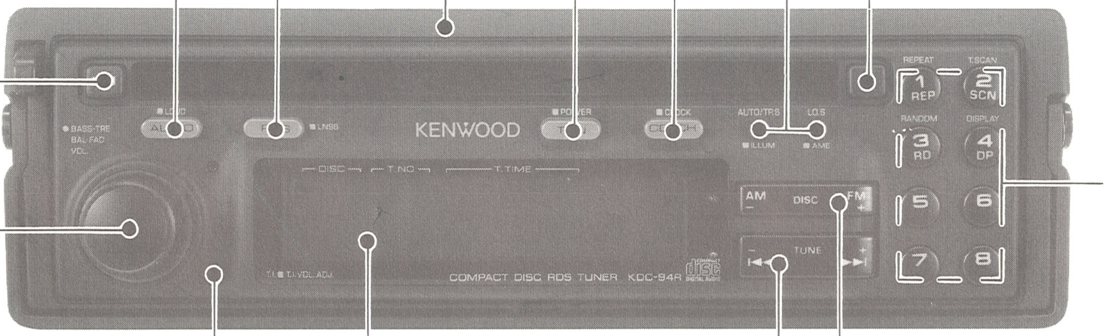
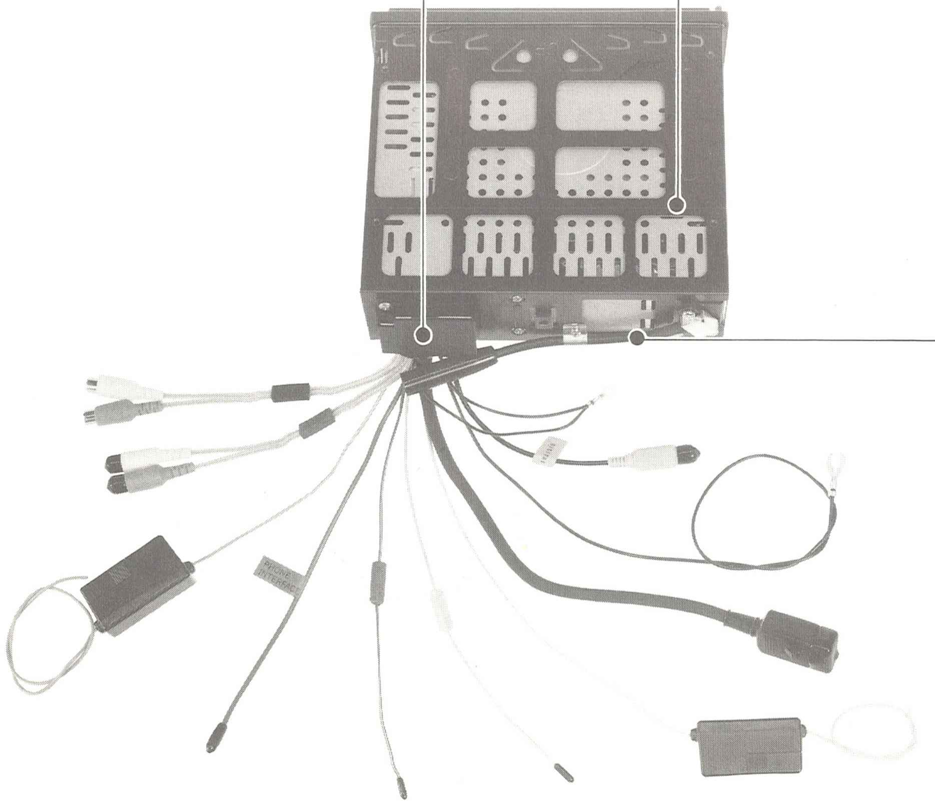
B51-6289-00 (O) 1598


Knob (PLAY/PAUSE)
(K24-0793-04)
Knob (AUDIO)
(K24-0782-03)
Knob (RDS)
(K24-0789-03)
Escutcheon assy
(B07-2025-12)
Knob (TUN)
(K24-0784-03)
Knob (CD-CH)
(K24-0788-03)
Knob (AUTO)
(K24-0795-04)x2
Konb (EJECT)
(K24-0794-04)
A
Knob (VOL.)
(K23-1009-03)
Knob (T.I)
(K24-0792-04)
Front glass
(B10-1402-03)
Knob (TUNE)
(K25-0571-03)
Knob (AM/FM)
(K25-0567-03)

Knob (1) (K24-0812-03)	Knob (2) (K24-0813-03)
Knob (3) (K24-0814-03)	Konb (4) (K24-0815-03)
Knob (5) (K24-0829-03)	Knob (6) (K24-0625-13)
Knob (7) (K24-0626-13)	Knob (8) (K24-0616-13)


Connector assy
(E30-3950-05)
Mtallic cabinet
(A01-2538-01)
Cord with connector
(E30-3671-05)

CONTENTS/CONNECTIONS

Contents

CONNECTIONS 2
DESCRIPTION OF RDS 3
BLOCK AND LEVEL DIAGRAM 4

CIRCUIT DESCRIPTION

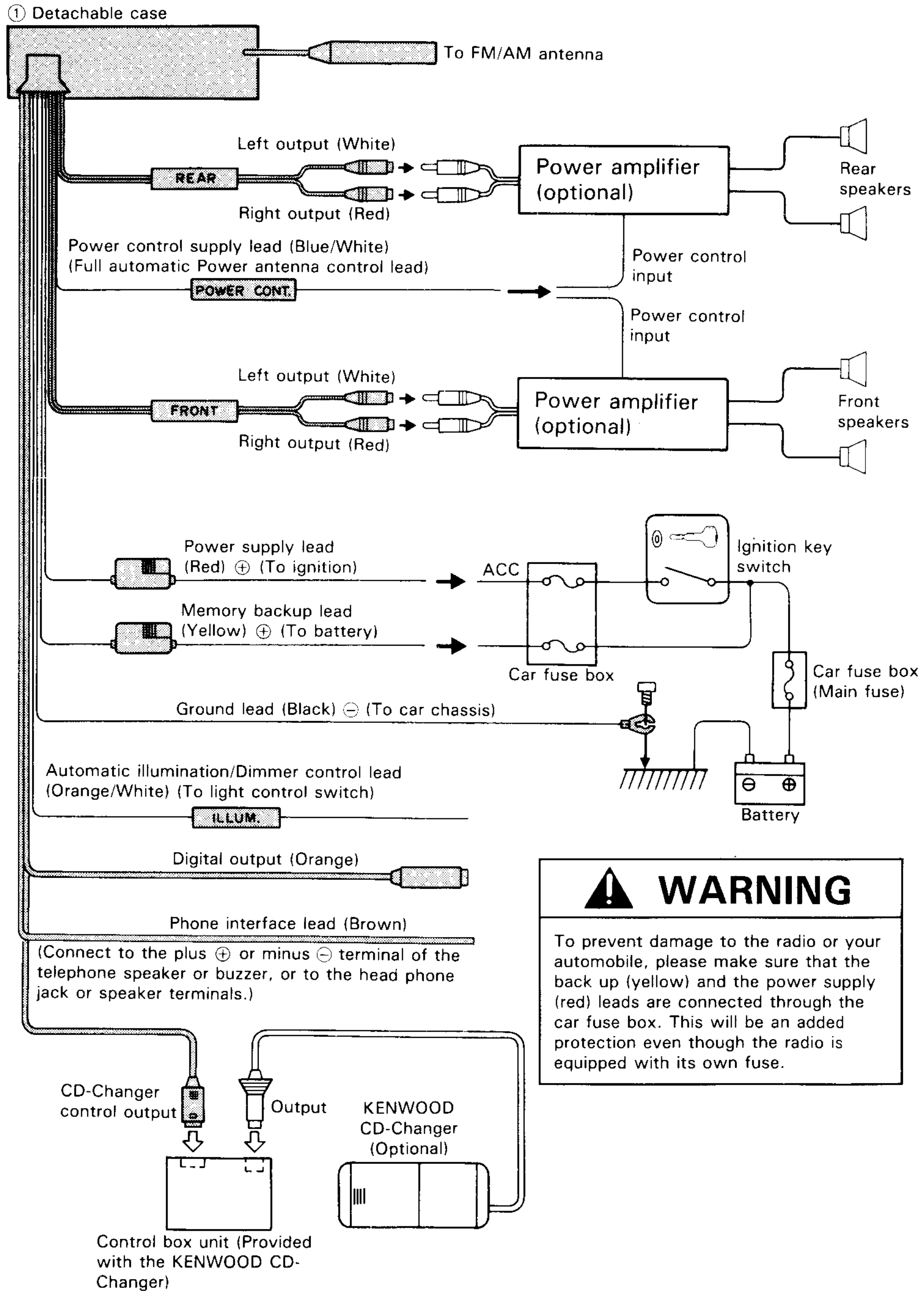
1. Description of Components 5
2. Microprocessor : CXP81316-315Q (IC1) 7
3. Microprocessor Block Diagram and Key Matrix 10
4. Test Mode 12
5. RF Amp / Servo : TA8191F (IC1) 13
6. Signal Processor : TC9236F (IC2) 15

MECHANISM OPERATION DESCRIPTION

1. Loading 19
2. Ejection 22
3. Mechanism Operation Timing 25

ADJUSTMENT 28
PC BOARD 31
SCHEMATIC DIAGRAM 39
EXPLODED VIEW (MECHANISM) 50
EXPLODED VIEW (UNIT) 52
PARTS LIST 53
ERROR MESSAGE 67
SPECIFICATIONS .... BACK COVER

Connections



① Detachable case
To FM/AM antenna
Left output (White)
REAR
Right output (Red)
Power amplifier (optional)
Rear speakers
Power control supply lead (Blue/White)
(Full automatic Power antenna control lead)
POWER CONT.
Power control input
Power control input
Left output (White)
FRONT
Right output (Red)
Power amplifier (optional)
Front speakers
Power supply lead
(Red) ⊕ (To ignition)
ACC
Ignition key switch
Memory backup lead
(Yellow) ⊕ (To battery)
Car fuse box
Car fuse box (Main fuse)
Ground lead (Black) ⊖ (To car chassis)
Automatic illumination/Dimmer control lead
(Orange/White) (To light control switch)
ILLUM.
Battery
Digital output (Orange)
Phone interface lead (Brown)
(Connect to the plus ⊕ or minus ⊖ terminal of the telephone speaker or buzzer, or to the head phone jack or speaker terminals.)
CD-Changer control output
Output
KENWOOD CD-Changer (Optional)
Control box unit (Provided with the KENWOOD CD-Changer)

⚠ WARNING

To prevent damage to the radio or your automobile, please make sure that the back up (yellow) and the power supply (red) leads are connected through the car fuse box. This will be an added protection even though the radio is equipped with its own fuse.

DESCRIPTION OF RDS

Description of RDS

The RDS stands for Radio Data System, which is a system for broadcasting the information for use by auto tuning, traffic information, program identification information, etc., in digital-modulated wave using the 57kHz subcarrier of FM broadcasting.

1. RDS data used with the set

- **PI (Program Identification)**

Code identifying each program chain, for use in auto tuning.

- **PS (Program Service Name)**

Up to eight alphanumeric characters representing the name of each program chain. Transmitted for being displayed on the set display.

- **AF (Alternative Frequency)**

Lists of frequencies of the stations transmitting the same program chain. For use in increasing the auto tuning speed.

- **TP (Traffic Program identification)**

Data for identifying a station as a station transmitting traffic information. Corresponds to SK signal.

- **TA (Traffic Announcement identification)**

Code transmitted by a station with TP while it broadcasts traffic information. Corresponds SK signal.

- **CT (Clock Time and data)**

Transmits correct time (together with month / day / year data and week) every minute.

2. Keys associated with RDS

- **RDS**

RDS operation (auto tuning) ON / OFF switch. The RDS indicator blinks while RDS data cannot be identified.

- **LNSS (Local-area Network Search System)**

In PI search during RDS reception, also searches local stations in the same area (by ignoring the second word of PI codes).

- **TI (Traffic Information)**

Traffic information reception select key. Has the same functions as the SDK key, but provides TP indiction against SK and BK, and TA indication against DK. The RDS and SDK operate individually between each other but, as the detected signals are ORed, they can operate only with one of the signals.

- **CLOCK**

24 -hour clock. As the clock display is based on CT data of the RDS, it is not displayed unless an RDS station (containing CT) is being received. "– – : – –" is displayed in other cases.

3. Auto tuning and traffic information reception of RDS

The RDS tuner allows to receive the best broadcasting wave possible by searching the AF (alternative frequency)list transmitted by broadcasting stations. The search using the SF is referred to as "AF search", and instantaneous movement between stations is possible like with preset station recall.

In case the current receiving condition of a station is degraded (to below the stop level) and no receivable station is found in the AF list, the "PI search" (named because of the use of PI codes) is performed to seek up a station broadcasting the same contents.

As for the traffic information, the conventional SDK can be received as it is. The RDS has TP and TA which correspond to SK and DK, so it's operation is basically the same. The set has independent SDK and RDS demodulator circuits but, as the detected signals are ORed, TP search initiated by turning TI ON stops with either SK (BK) of SDK or TP of RDS. This also applies to DK and TA.

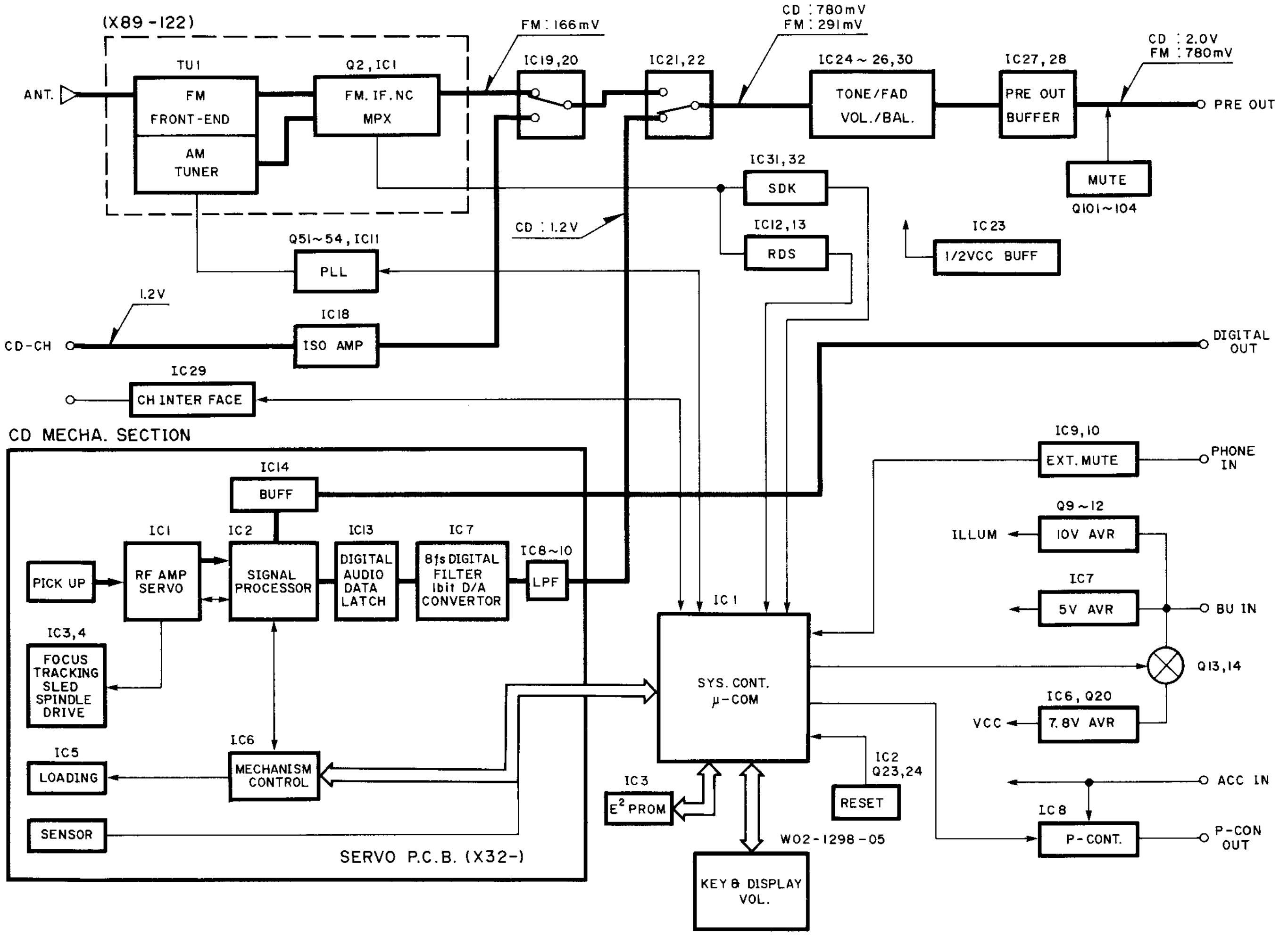
4. AF search

Using the AF list in the RDS data, when a specified period of time has elapsed in a certain receiving condition (field strength), another station is searched (based on the AF list). This search is performed when multipath noise is received to prevent sound from being interrupted. The search is momentary, and the frequency display on the receiver does not change. If another station (found based on the AF list) is found to present a better receiving condition, the momentary movement occurs at that moment. The frequency changes naturally at this time, but it cannot be seen directly on the LCD frequency display because the PS code is being displayed.

The level with which the movement of AF search is determined is set by SD1, SD2 and SD3, and the actual levels are 20, 30 and 40 dB respectively. No movement occurs under these levels.

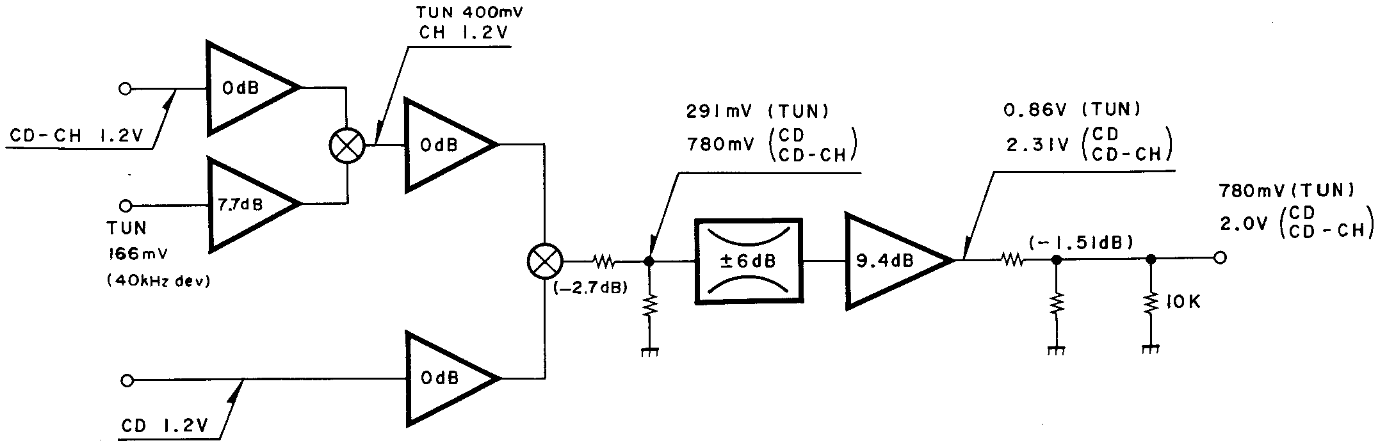
BLOCK AND LEVEL DIAGRAM

Block Diagram


(X89-122)
ANT.
TU1
FM
FRONT-END
AM
TUNER
Q2, IC1
FM. IF. NC
MPX
FM : 166mV
IC19,20
IC21,22
CD : 780mV
FM : 291mV
IC24~26,30
TONE/FAD
VOL./BAL.
IC27,28
PRE OUT
BUFFER
CD : 2.0V
FM : 780mV
PRE OUT
MUTE
Q101~104
IC31,32
SDK
IC12,13
RDS
IC23
1/2VCC BUFF
CD : 1.2V
Q51~54, IC11
PLL
1.2V
CD-CH
IC18
ISO AMP
DIGITAL OUT
IC29
CH INTER FACE
CD MECHA. SECTION
IC14
BUFF
IC1
IC2
IC13
IC7
IC8~10
PICK UP
RF AMP
SERVO
SIGNAL
PROCESSOR
DIGITAL
AUDIO
DATA
LATCH
8fs DIGITAL
FILTER
1bit D/A
CONVERTOR
LPF
IC3,4
FOCUS
TRACKING
SLED
SPINDLE
DRIVE
IC6
MECHANISM
CONTROL
IC5
LOADING
SENSOR
SERVO P.C.B. (X32-)
IC1
SYS. CONT.
μ-COM
IC3
E² PROM
KEY & DISPLAY
VOL.
W02-1298-05
IC2
Q23,24
RESET
IC9,10
EXT. MUTE
PHONE IN
Q9~12
ILLUM
10V AVR
IC7
5V AVR
BU IN
Q13,14
IC6, Q20
VCC
7.8V AVR
ACC IN
IC8
P-CONT.
P-CON OUT

KDC-94R

Level Diagram


CD-CH 1.2V
0dB
TUN 400mV
CH 1.2V
7.7dB
TUN
166mV
(40kHz dev)
0dB
CD 1.2V
0dB
(−2.7dB)
291mV (TUN)
780mV (CD / CD-CH)
±6dB
9.4dB
0.86V (TUN)
2.31V (CD / CD-CH)
(−1.51dB)
10K
780mV (TUN)
2.0V (CD / CD-CH)

CIRCUIT DESCRIPTION

1. Description of components

ELECTRICAL UNIT (X25-4512-70)

Ref No.	Use / Function	Operation / Condition
Q1	RESET	Changer reset output.
Q2	EXT RST	Turns EXT RST of IC1 "H" when Reset SW is pressed.
Q3	BACKUP DETECT	Collector "L" when backup is used.
Q4	BUZZER DRIVER	Converts voltage.
Q5, 6	ILLUMINATION SW	Switches between green / amber.
Q7, 8	DIMMER	OFF when dimmer is ON.
Q9, 10	10V AVR	Power supply for illumination and buzzer.
Q11, 12	10V AVR ON / OFF SW	
Q13	POWER ON / OFF SW	Buffer for microcomputer P-ON.
Q14	14.4V SW	Interlocked with microcomputer P-ON.
Q15	5V SW	Interlocked with microcomputer P-ON.
Q16, 17	SMALL DETECT	Microcomputer SMALL input buffer, dimmer SW.
Q18	ACC DETECT	Collector "L" when ACC is ON.
Q19	EX MUTE BUFFER	Collector "L" when EX MUTE is ON.
Q20	AVR 7.8V output.	
Q21, 22	MUTE	Audio muting driver.
Q23, 24	RESET	Microcomputer reset.
Q51	LPF	LPF for AM Vt.
Q52	LPF	LPF for FM Vt.
Q53	LPF	Load of Q52, regulated current supply.
Q54	FM LPF TIME CONSTANT SW	
Q55	FM +B ON / OFF	
Q56	AM +B ON / OFF	
Q57	AM AGC CUT	Decreases time constant during seek operation.
Q58	AM SD OUT BUFFER	"L" during reception.
Q59	FM METER BUFFER	Variable according to ANT input level.
Q60	FM MUTE OUT	Turns S meter output "L" according to FM muting output.
Q61	S METER OUT BUFFER	Emitter-follower.
Q62, 63	5V SW	Power ON / OFF switch for RDS sync microcomputer (IC12). OFF for AM.
Q64	RESET	RDS sync microcomputer reset driver. Reset by IC1.
Q65	NOISE DETECT	Related to frequency of search with RDS.
Q66	COMPOSITE OUT BUFFER	
Q67, 68	MUTE	Inhibits FM LPF input during AM.
Q69	SW	Switches FM Vt time constant, switches C67 ON / OFF.
Q101 ~ 104	MUTE	Audio muting.
D1 ~ 5	REVERSE CURRENT BUFFER	
D6		Provides difference between ON / OFF time constants.
D7	LEVEL SHIFT	Determines threshold.
D8	VREF	
D9	OR	ORs SW 5V and SMALL inputs.
D10	REVERSE CURRENT PREVENT	Prevents flow of BU.
D11, 12	REVERSE CONNECTION PROTECT	
D13		Provides difference between ON / OFF detect time constants.
D14	LEVEL SHIFT	Determines threshold.
D15	REVERSE CURRENT PREVENT	
D16	RECTIFIER	Rectifies EXT MUTE signal.
D17, 18	IC9 PROTECT	
D19, 20	OR	ORs reset input and microcomputer muting output.
D21, 22	INPUT PROTECT	
D23	REVERSE CURRENT PREVENT	
D24	REVERSE CURRENT PREVENT	

CIRCUIT DESCRIPTION

Ref No.	Use / Function	Operation / Condition
D52	CONSTANT VOLTAGE	For AM LPF.
D53	TEMPERATTURE COMPENSATE	
D54	CONSTANT VOLTAGE	
IC1	SYSTEM CONTROL	
IC2	RESET IC	Outputs "L" at 3.8V or less.
IC3	EEPROM	Memory protection during power OFF.
IC4, 5	BUZZER OSCOILATOR	Turns beep ON when IC5 pin 1 is "H".
IC6	AVR DRIVER	7.8V AVR.
IC7	AVR	5V for mechanism servo, microcomputer and digital circuitry (3-terminal IC with small standby current. Ordinary products cannot be used).
IC8	POWER CONTROL IC	Power control / power antenna output.
IC9, 10	PHONE INTERFACE	External muting.
IC11	PLL, AM / FM / LW SW, AFC / AGC TIME CONSTANT SW, LO / DX SW	
IC12	RDS DATA SYNC MICROCOMPUTER	
IC13	RDS DATA DEMODULATOR	Demodulates data and clock from composite signal.
IC15	LPF TIME CONSTANT SW	Decreases time constant during search.
IC16	COMPOSITE ON / OFF, AM DS / FM S METER SW	Turns composite signal OFF based on FM MUTE.
IC17	INVERTER, SCHEMITT TRIGGER	Provides hysteresis to muting ouput (for turning composite signal ON / OFF).
IC18	CHANGER INPUT BUFFER	Voltage follower.
IC19 ~ 22	CD /CH / TU INPUT SW	Input switching using opamps with switch.
IC23	1/2 VCC BUFFER	Outputs 1/2 of 7.8V. Audio amp.
IC24	VOLUME BUFFER	Voltage follower.
IC25, 26	FADER BUFFER, TONE AMP	Voltage follower.
IC27, 28	PREOUT BUFFER	
IC29	CHANGER INTERFACE BUFFER	
IC30	ELECTRONIC VOLUME / TONE IC	VR, fader, balance, tone.
IC31	SDK IC	Demodulation of SDK.

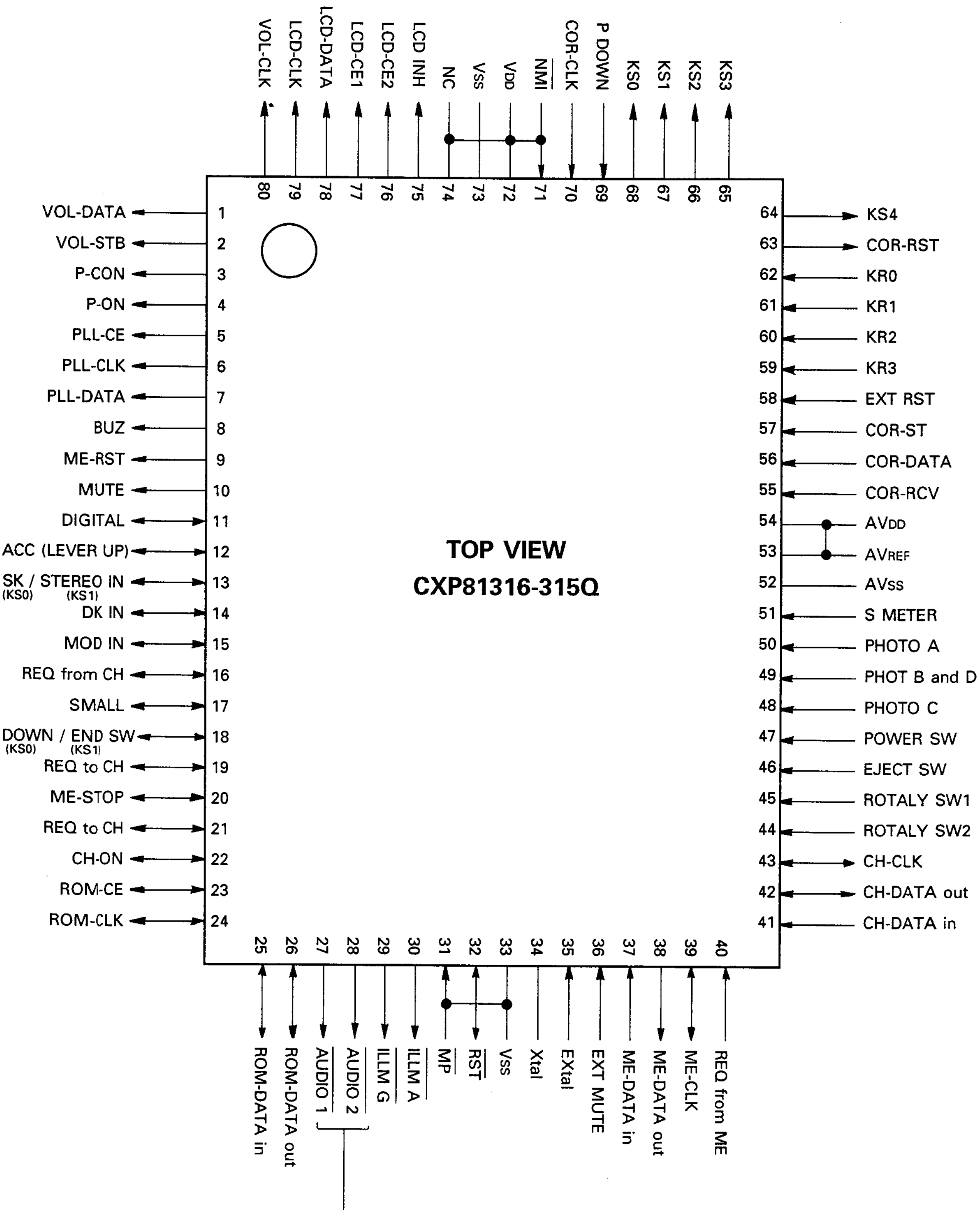
DAUGHTER UNIT (X89-1222-72)

Ref. No.	Use/Function	Operation/Condition
IC1	FM IF, DET, NC, MPX	
Q1	Local/DX switch	Turns ON when local is selected, and turns ON during seek operation
Q2	IF amplifier	Amplifies the IF signal in FM broadcast.
Q3,4	AM AGC	Turns ON during seek operation.
Q5	CRSC switch	Turns ON when the multipath occurs by the pulse from IC1 to set to monaural mode forcibly.
Q6	Mute	Turns ON during reception
Q7	AFC switch	Switches the time constant for the AFC terminal. Turns ON during reception and turns OFF during seek operation.

CIRCUIT DESCRIPTION

2. Microprocessor : CXP81316-315Q (X25-4512) IC1

2-1. Terminal connection


TOP VIEW
CXP81316-315Q
1 VOL-DATA
2 VOL-STB
3 P-CON
4 P-ON
5 PLL-CE
6 PLL-CLK
7 PLL-DATA
8 BUZ
9 ME-RST
10 MUTE
11 DIGITAL
12 ACC (LEVER UP)
13 SK / STEREO IN (KS0) (KS1)
14 DK IN
15 MOD IN
16 REQ from CH
17 SMALL
18 DOWN / END SW (KS0) (KS1)
19 REQ to CH
20 ME-STOP
21 REQ to CH
22 CH-ON
23 ROM-CE
24 ROM-CLK
25 ROM-DATA in
26 ROM-DATA out
27 AUDIO 1
28 AUDIO 2
29 ILLM G
30 ILLM A
31 MP
32 RST
33 Vss
34 Xtal
35 EXtal
36 EXT MUTE
37 ME-DATA in
38 ME-DATA out
39 ME-CLK
40 REQ from ME
41 CH-DATA in
42 CH-DATA out
43 CH-CLK
44 ROTALY SW2
45 ROTALY SW1
46 EJECT SW
47 POWER SW
48 PHOTO C
49 PHOT B and D
50 PHOTO A
51 S METER
52 AVss
53 AVREF
54 AVDD
55 COR-RCV
56 COR-DATA
57 COR-ST
58 EXT RST
59 KR3
60 KR2
61 KR1
62 KR0
63 COR-RST
64 KS4
65 KS3
66 KS2
67 KS1
68 KS0
69 P DOWN
70 COR-CLK
71 NMI
72 VDD
73 Vss
74 NC
75 LCD INH
76 LCD-CE2
77 LCD-CE1
78 LCD-DATA
79 LCD-CLK
80 VOL-CLK

	AUDIUO 1	AUDIO 2
CD-CH	"H"	"H"
TUNER	"L"	"H"
CD	*	"L"

CIRCUIT DESCRIPTION

2-2. Terminal function description (CXP81316-315Q)

Pin No.	Pin name	I/O	Symbol	Function				
1	PA1	O	VOL-DATA	ELEC. VOLUME DATA LINE				
2	PA0	O	VOL-STB	ELEC. VOLUME STROB LINE				
3	PB7	O	P-CON	POWER CONTROLL LINE				
4	PB6	O	P-ON	POWER CONTROLL LINE				
5	PB5	O	PLL-CE	PLL CE LINE				
6	PB4	O	PLL-CLK	PLL CLOCK LINE				
7	PB3	O	PLL-DATA	PLL DATA LINE				
8	PB2	O	BEEP	BEEP CONTROLL LINE				
9	PB1	O	ME-RST	MECHA CONTROL μ-COM RESET LINE				
10	PB0	O	MUTE	MUTE LINE				
11	PC7	I	DIGITAL	DIGITAL OUT SELECT IN				
12	PC6	I	Acc	ACC (LEVER UP) IN				
13	PC5	I	SK / STEREO	SK (KS0) / STEREO (KS1) IN				
14	PC4	I	DK IN	DK IN				
15	PC3	I	CRSC	NOISE DETECT IN				
16	PC2	I	REQFRCH	REQFRCH from CHANGER				
17	PC1	I	SMALL	SMALL IN				
18	PC0	I	DOWN / END	DOWN (SK0) / END (SK1) IN				
19	PD7	O	REQTOME	REQUEST to MECHA				
20	PD6	O	ME-STOP	MECHA CONTROLL μ-COM STOP				
21	PD5	O	REQTOCH	REQUEST to CHANGER				
22	PD4	O	CH-ON	CHANGER ON				
23	PD3	O	ROM-CE	EEPROM CE LINE				
24	PD2	O	ROM -CLK	EEPROM CLOCK LINE				
25	PD1	I	ROM-DATA IN	EEPROM DATA IN LINE				
26	PD0	O	ROM-DATA OUT	EEPROM DATA OUT LINE				
27	PH3	O	AUDIO 1	AUDIO SELECT		TUNER	CHANGER	CD
					AUDIO 1	L	H	*
28	PH2		AUDIO 2		AUDIO 2	H	H	L
29	PH2	O	ILLUM G	ILLUM GREEN				
30	PH1	O	ILLUM A	ILLUM AMBER				
31	$\overline{\text{MP}}$	I	MP	GND				
32	$\overline{\text{RESET}}$	I	RESET IN	μ-COM RESET IN				
33	Vss	I	Vss	GND LINE				
34	Xtal		Xtal	Xtal CONNECTION LINE (8.388MHz)				
35	EXtal		EXtal					
36	$\overline{\text{CSO}}$	I	EXT MUTE	PHONE INTER FACE LINE				
37	SIO	I	ME-DATA IN	MECHA DATA IN LINE				
38	SOO	O	ME-DATA OUT	MECHA DATA OUT LINE				
39	$\overline{\text{SCKO}}$	O	ME-CLK	MECHA CLOCK OUT LINE				
40	PF7 / $\overline{\text{INT1}}$	I	REQFRME	REQUEST from MECHA				

CIRCUIT DESCRIPTION

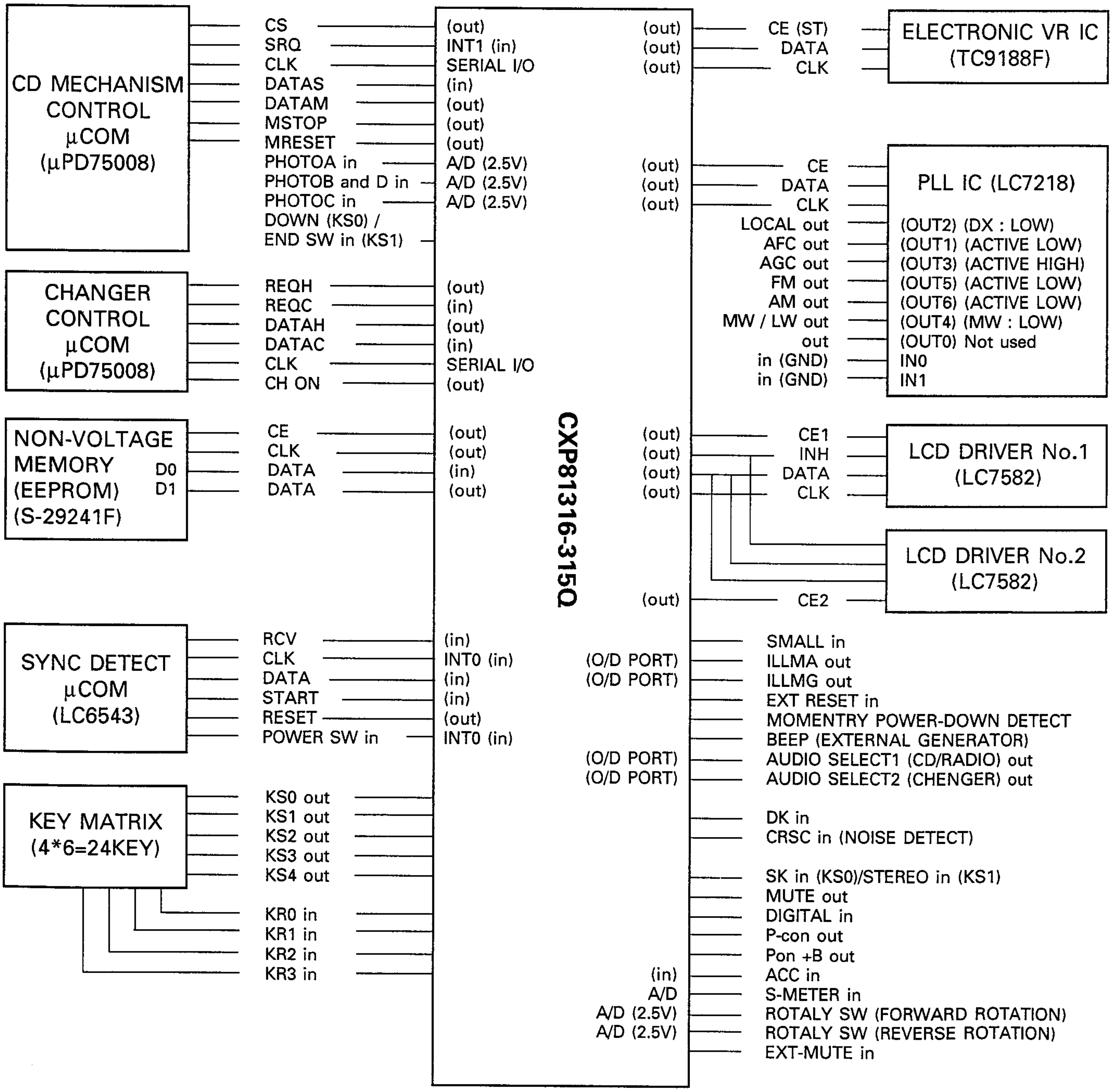
2-2. Terminal function description (CXP81316-315Q)

Pin No.	Pin name	I/O	Symbol	Function
41	PF6 / SI1	I	CH-DATA IN	CHANGER DATA IN LINE
42	PF5 / S01	O	CH-DATA OUT	CHANGER DATA OUT LINE
43	PF4 / $\overline{\text{SCK1}}$	O	CH-CLK	CHANGER CLOCK LINE
44	PF3 / AN7	I	ROTALY SW2	ROTALY SW 2 IN
45	PF2 / AN6	I	ROTALY SW1	ROTALY SW 1 IN
46	PF1 / AN5	I	EJECT SW	EJECT SW IN
47	PF0 / AN4	I	POWER SW	POWER SW IN
48	AN3	I	PHOTO C	MECHA PHOTO SENSOR C IN
49	AN2	I	PHOTO BD	MECHA PHOTO SENSOR B and D IN
50	AN1	I	PHOTO A	MECHA PHOTO SENSOR A IN
51	AN0	I	S METER	S METER IN
52	AV$_{SS}$	I	AV$_{SS}$	ANALOG GND
53	AV$_{REF}$	I	AV$_{REF}$	ANALOG REF
54	AV$_{DD}$	I	AV$_{DD}$	ANALOG V$_{DD}$
55	PG7	I	COR-RCV	SYNC µ-COM SYNC IN
56	PG6	I	COR-DATA	SYNC µ-COM DATA IN
57	PG5	I	COR-ST	SYNC µ-COM START IN
58	PG4	I	EXT RST	EXT RESET IN
59	PG3	I	KR3	KEY RETURN 3
60	PG2	I	KR2	KEY RETURN 2
61	PG1	I	KR1	KEY RETURN 1
62	PG0	I	KR0	KEY RETURN 0
63	PE7	O	COR-RST	SYNC µ-COM RESET
64	PE6	O	KS4	KEY SCAN 4
65	PE5	O	KS3	KEY SCAN 3
66	PE4	O	KS2	KEY SCAN 2
67	PE3	O	KS1	KEY SCAN 1
68	PE2	O	KS0	KEY SCAN 0
69	PE1	I	P-DOWN	POWER DOWN IN
70	PE0	I	COR-CLK	SYNC µ-COM CLOCK IN
71	$\overline{\text{NMI}}$	I	NMI	GND
72	V$_{DD}$	I	V$_{DD}$	POWER SUPPLY
73	V$_{SS}$	I	V$_{SS}$	GND
74	NC		NON CONECT	
75	PA7	O	LCD-INH	LCD INHBIT OUT
76	PA6	O	LCD-CE2	LCD-CE2 LINE
77	PA5	O	LCD-CE1	LCD-CE1 LINE
78	PA4	O	LCD-DATA	LCD DATA LINE
79	PA3	O	LCD-CLK	LCD CLOCK LINE
80	PA2	O	VOL-CLK	ELEC. VOLUME CLOCK LINE

CIRCUIT DESCRIPTION

3. Microprocessor Bock Diagram and Key Matrix

3-1. Connection Diagram of Microcomputers and their Surroundings


CXP81316-315Q
CD MECHANISM CONTROL µCOM (µPD75008)
CS (out)
SRQ INT1 (in)
CLK SERIAL I/O
DATAS (in)
DATAM (out)
MSTOP (out)
MRESET (out)
PHOTOA in A/D (2.5V)
PHOTOB and D in A/D (2.5V)
PHOTOC in A/D (2.5V)
DOWN (KS0) / END SW in (KS1)
CHANGER CONTROL µCOM (µPD75008)
REQH (out)
REQC (in)
DATAH (out)
DATAC (in)
CLK SERIAL I/O
CH ON (out)
NON-VOLTAGE MEMORY (EEPROM) (S-29241F)
D0
D1
CE (out)
CLK (out)
DATA (in)
DATA (out)
SYNC DETECT µCOM (LC6543)
RCV (in)
CLK INT0 (in)
DATA (in)
START (in)
RESET (out)
POWER SW in INT0 (in)
KEY MATRIX (4*6=24KEY)
KS0 out
KS1 out
KS2 out
KS3 out
KS4 out
KR0 in
KR1 in
KR2 in
KR3 in
ELECTRONIC VR IC (TC9188F)
(out) CE (ST)
(out) DATA
(out) CLK
PLL IC (LC7218)
(out) CE
(out) DATA
(out) CLK
LOCAL out (OUT2) (DX : LOW)
AFC out (OUT1) (ACTIVE LOW)
AGC out (OUT3) (ACTIVE HIGH)
FM out (OUT5) (ACTIVE LOW)
AM out (OUT6) (ACTIVE LOW)
MW / LW out (OUT4) (MW : LOW)
out (OUT0) Not used
in (GND) IN0
in (GND) IN1
LCD DRIVER No.1 (LC7582)
(out) CE1
(out) INH
(out) DATA
(out) CLK
LCD DRIVER No.2 (LC7582)
(out) CE2
SMALL in
(O/D PORT) ILLMA out
(O/D PORT) ILLMG out
EXT RESET in
MOMENTRY POWER-DOWN DETECT
BEEP (EXTERNAL GENERATOR)
(O/D PORT) AUDIO SELECT1 (CD/RADIO) out
(O/D PORT) AUDIO SELECT2 (CHENGER) out
DK in
CRSC in (NOISE DETECT)
SK in (KS0)/STEREO in (KS1)
MUTE out
DIGITAL in
P-con out
Pon +B out
(in) ACC in
A/D S-METER in
A/D (2.5V) ROTALY SW (FORWARD ROTATION)
A/D (2.5V) ROTALY SW (REVERSE ROTATION)
EXT-MUTE in

NOTE : **The diagram does not reflect the actual pin layout.**

3-2. Conditions According to Destinations and Models

• Model selection

The KDC-94R and 84R are toggled by pulling up or down the ROM-CLK terminal at pin 24.
Pull-up : KDC-94R
Pull-down : KDC-84R

• AF search destination

The used and non-use of muting during AF search are toggled by pulling up or down the ROM-DATA OUT terminal at pin 26.
Pull-up : Muting is not turned OFF until PI is confirmed.
Pull down : Muting is turned OFF.

3-3. Key Description

KEY MATRIX	KS0 (68 PIN)	KS1 (67PIN)	KS2 (66PIN)	KS3 (65PIN)	KS4 (64PIN)
KR0 (62 PIN)	RDS / LNSS	AUDIO	PLAY / PAUSE	T1 / ADJ	Not use
KR1 (61 PIN)	◁◁ (AM)	|◁◁ (DOWN)	LOCAL	AUTO	KDC-94R : CD-CH KDC-84R : LOUD / CLOCK
KR2 (60 PIN)	▷▷ (FM)	▷▷| (UP)	$\boxed{7}$	$\boxed{3}$	$\boxed{5}$
KR3 (59 PIN)	$\boxed{0}$	$\boxed{2}$	$\boxed{8}$	$\boxed{6}$	$\boxed{4}$

* The TUN key and EJECT key signals are input through pin 47 and pin 46 respectively.

		KS0 (PE2)	KS1 (PE3)	KS2 (PE4)	KS3 (PE5)	KS4 (PE6)	
KR0 (PG0)	CD	RDS ■ LNSS	AUDIO ■AUDIO RETURN (KDC-84R) ■ LOUDNESS (KDC-94R)	PLAY / PAUSE	T1 ■ T1 VOL ADJUST		
	CD-CH			CD PLAY			
	TUNER						
KR1 (PG1)	CD	◁◁ MANUAL DOWN	|◁◁ TRACK SEARCH DOWN		TP SEARCH (T1 ON MODE)	KDC-94R CD-CH ■	KDC-84R LOUD ■
	CD-CH	◁◁ DISC DOWN					
	TUNER	MW / LW	TUNING DOWN	LOCAL■ AUTO-MEMO	AUTO / MANUAL	CLOCK	CLOCK
KR2 (PG2)	CD	▷▷ MANUAL UP	▷II TRACK SEARCH UP		RANDUM PLAY		
	CD-CH	▷▷ DISC UP					
	TUNER	FM 1/2	TUNING UP	PRESET $\boxed{7}$	PRESET $\boxed{3}$	PRESET $\boxed{5}$	
KR3 (PG3)	CD	REPEAT ON / OFF	TRACK SCAN			DISPLAY	
	CD-CH	REPEAT 1 / ALL / OFF	TRACK SCAN■ DISC SCAN				
	TUNER	PRESET $\boxed{1}$	PRESET $\boxed{2}$	PRESET $\boxed{8}$	PRESET $\boxed{6}$	PRESET $\boxed{4}$	

* With only the TURN keys, signals are input through the POWER port at pin 47.

* With only the EJECT key, signal is input through the POWER port at pin 46.

CIRCUIT DESCRIPTION

4. TEST MODES for use in servicing

4-1. DISPLAY test mode

To enter the DISPLAY test mode, reset the unit while holding the EJECT key depressed (All-light indication in the LCD display).

4-2. RDS test mode (S-METER)

To enter the RDS test mode, reset while holding the AUDIO key depressed and switch the power ON (The EON is displayed).

ANT input
20dBu : REP segment lights up
(FM SD adjustment) .... SDI

4-3. CD test mode

The main purpose of this test mode is to check troubles with the mechanism and servo system of the CD player.

Setting method

Reset while holding the SEARCH UP (⏭) key depressed and switch the power ON.

Test mode contents

When a CD is loaded, the following steps start, and an error code is displayed in case of error.

(1) Starts loading the CD.

- The mechanism controller does not function normally, making communications impossible. → **ER-00**
- Loading does not complete in 15 seconds. → **ER-01**

(2) Starts playback

- The feed motor is moved to the innermost position, but the limit switch does not go on within 15 seconds after it. → **ER-02**
- Focus search is started, but focusing is not applied within 15 seconds after it. → **ER-03**
- The CLV and tracking servoes are turned ON, but tracking search continues for more than 15 seconds after it. → **ER-04**
- All servoes are turned ON, but the sub-code cannot be read out within 15 seconds after it. → **ER-05**

(3) Plays the first track for 30 seconds

- The sync pattern in the EFM signal is not detected for more than 17 ms continuously. → **ER-06**
- Focusing error occurs. → **ER-07**

(4) Search the last track

- The search does not complete in 15 seconds after the start. → **ER-08**

(5) Plays the last track for 30 seconds

- The sync patter in the EFM signal is not detected for more than 17 ms continuously. → **ER-06**
- Focusing error occurs. → **ER-07**

(6) Stops

- The stoppage occurs while the brake release signal cannot be detected. → **ER-09**

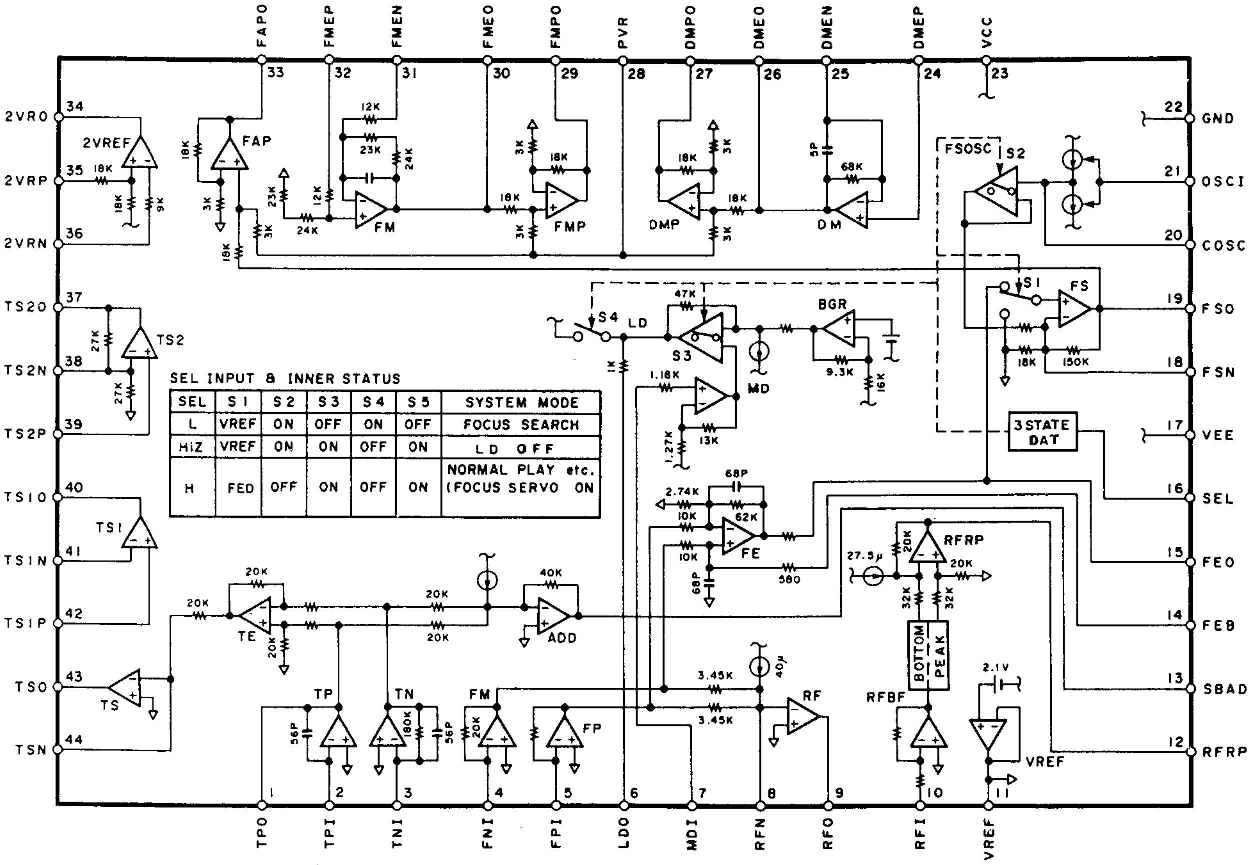
4-4. Exit from the test mode

Reset the system or turn Acc OFF to exit the test mode.

CIRCUIT DESCRIPTION

5. RF Amp / Servo : TA8191F (X32-1970) IC1

5-1. Block diagram


FAPO 33
FMEP 32
FMEN 31
FMEO 30
FMPO 29
PVR 28
DMPO 27
DMEO 26
DMEN 25
DMEP 24
VCC 23
GND 22
OSCI 21
COSC 20
FSO 19
FSN 18
VEE 17
SEL 16
FEO 15
FEB 14
SBAD 13
RFRP 12
2VRO 34
2VRP 35
2VRN 36
TS2O 37
TS2N 38
TS2P 39
TS1O 40
TS1N 41
TS1P 42
TSO 43
TSN 44
TPO 1
TPI 2
TNI 3
FNI 4
FPI 5
LDO 6
MDI 7
RFN 8
RFO 9
RFI 10
VREF 11
2VREF
FAP
FM
FMP
DMP
DM
FSOSC
S2
S1
FS
S4
LD
S3
BGR
MD
3STATE DAT
FE
RFRP
BOTTOM
PEAK
RFBF
VREF
2.1V
27.5μ
40μ
TE
ADD
TS
TS1
TS2
TP
TN
FM
FP
RF

SEL INPUT & INNER STATUS

SEL	S 1	S 2	S 3	S 4	S 5	SYSTEM MODE
L	VREF	ON	OFF	ON	OFF	FOCUS SEARCH
HiZ	VREF	ON	ON	OFF	ON	LD OFF
H	FED	OFF	ON	OFF	ON	NORMAL PLAY etc. (FOCUS SERVO ON

5-2. Terminal function description (TA8191F)

Pin No.	Symbol	I/O	Function	Remark
1	TPO	O	Sub-beam I-V amp (TP AMP) output terminal.	Connected to TPI via adjustment feedback resistor.
2	TPI	I	Sub-beam I-V amp (TP AMP) input terminal.	Connected to PIN diode F.
3	TNI	I	Sub-beam I-V amp (TN AMP) input terminal.	Connected to PIN diode E.
4	FNI	I	Main beam I-V amp (FN AMP) input terminal.	Connected to PIN diode A + C.
5	FPI	I	Main beam I-V amp (FP AMP) output terminal.	Connected to PIN diode B + D.
6	LDO	O	Laser diode amp (LD AMP) output terminal.	Connected to laser diode circuit.
7	HDI	I	Monitor photodiode amp (MP AMP) input terminal.	Connected to monitor photodiode.
8	RFN	I	RF amp (RF AMP) inverted input terminal.	Connected to RFO via feedback resistor.
9	RFO	O	RF amp (RF AMP) output terminal.	
10	RFI	I	RF ripple signal generator input terminal.	Connected to RFO via CR.
11	VREF	O	Reference voltage output terminal (+2.1V).	
12	RFRP	O	RF ripple signal output terminal.	
13	SBAD	O	Scratch detect signal output terminal.	
14	FEB	I	Focusing error balance adjustment input terminal.	Semi-fixed resistor for adjustment is connected.
15	FEO	O	Focusing error amp (FE AMP) output terminal.	Resistor for gain adjustment is connected.
16	SEL	I	Analog switch control signal input terminal.	
17	VEE	–	Power supply terminal.	Connected to GND.
18	FSN	I	Focus output amp (FS AMP) inverted input terminal.	Connected to FSO via feedback CR.
19	FSO	O	Focus output amp (FS AMP) output terminal.	
20	COSC	O	Capasitor connection terminal for focus search signal generation.	CR are connected.

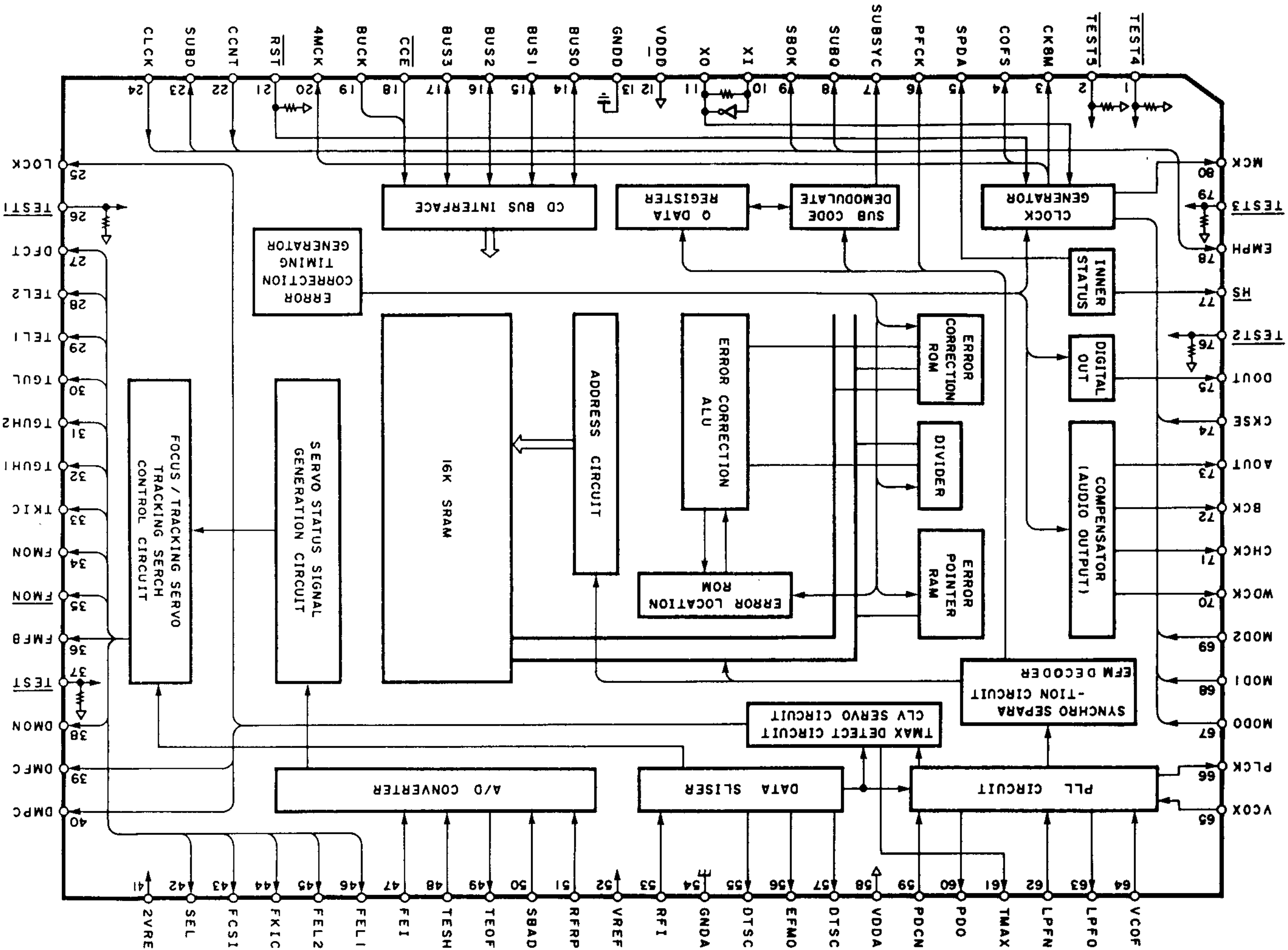
CIRCUIT DESCRIPTION

Pin No.	Symbol	I/O	Function	Remark
21	OSCI	I	Built-in current supply control input terminal for focus search signal generation.	
22	GND	–	Ground terminal.	
23	Vcc	–	Power supply terminal (+5V).	
24	DMEP	I	Disc motor amp (DM AMP) input terminal.	
25	DMEN	I	Disc motor amp (DM AMP) inverted input terminal.	
26	DMEO	O	Disc motor amp (DM AMP) output terminal.	
27	DMPO	O	Disc motor drive amp (DM AMP) output terminal.	
28	PVR	I	Drive amp reference voltage input terminal.	Connected to VREF.
29	FMPO	O	Feed motor drive amp (FMP AMP) output terminal.	
30	FMEO	O	Feed motor amp (FM AMP) output terminal.	
31	FMEN	I	Feed motor amp (FM AMP) inverted input terminal.	
32	FMEP	I	Feed motor amp (FM AMP) input terminal.	
33	FAPO	O	Focus actuator drive amp (FMP AMP) output terminal.	
34	2VRO	O	2VREF amp (2VREF AMP) output terminal.	Connected to 2VRP via external output Tr.
35	2VRP	I	2VREF amp (2VREF AMP) input terminal.	
36	2VRN	I	2VREF amp (2VREF AMP) inverted input terminal.	
37	TS2O	O	Tracking servo amp 2 (TS2 AMP) output terminal.	
38	TS2N	I	Tracking servo amp 2 (TS2 AMP) inverted input terminal.	
39	TS2P	I	Tracking servo amp 2 (TS2 AMP) input terminal.	
40	TS1O	O	Tracking servo amp 1 (TS1 AMP) output terminal.	
41	TS1N	I	Tracking servo amp 1 (TS1 AMP) inverted input terminal.	Connected to TS1O via feedback CR.
42	TS1P	I	Tracking servo amp 1 (TS1 AMP) input terminal.	
43	TSO	O	Tracking output amp (TS AMP) output terminal.	
44	TSN	I	Tracking output amp (TS AMP) inverted input terminal.	Connected to TSO via feedback CR.

CIRCUIT DESCRIPTION

6. Signal processor : TC9236F (X32-1970) IC2

6-1. Block diagram


CLCK
SUBD
CCNT
RST
4MCK
BUCK
CCE
BUS3
BUS2
BUS1
BUS0
GNDD
VDDD
XO
XI
SBOK
SUBQ
SUBSYC
PFCK
SPDA
COFS
CK8M
TEST5
TEST4
LOCK
TEST1
DFCT
TEL2
TEL1
TGUL
TGUH2
TGUH1
TKIC
FMON
FMON
FMFB
TEST
DMON
DMFC
DMPC
MCK
TEST3
EMPH
SH
TEST2
DOUT
CKSE
AOUT
BCK
CHCK
WDCK
MOD2
MOD1
MOD0
PLCK
VCOX
2VREF
SEL
FCSI
FKIC
FEL2
FEL1
FEI
TESH
TEOF
SBAD
RFRP
VREF
RFI
GNDA
DTSC2
EFMO
DTSC1
VDDA
PDCNT
PDO
TMAX
LPFN
LPFO
VCOF
CD BUS INTERFACE
Q DATA REGISTER
SUB CODE DEMODULATE
CLOCK GENERATOR
ERROR CORRECTION TIMING GENERATOR
INNER STATUS
ERROR CORRECTION ROM
DIGITAL OUT
16K SRAM
ADDRESS CIRCUIT
ERROR CORRECTION ALU
DIVIDER
COMPENSATOR (AUDIO OUTPUT)
ERROR POINTER RAM
ERROR LOCATION ROM
FOCUS / TRACKING SERVO TRACKING SERCH CONTROL CIRCUIT
SERVO STATUS SIGNAL GENERATION CIRCUIT
EFM DECODER SYNCHRO SEPARA-TION CIRCUIT
CLV SERVO CIRCUIT TMAX DETECT CIRCUIT
A/D CONVERTER
DATA SLISER
PLL CIRCUIT

6-2. Terminal function description (TC9236F)

Pin No.	Symbol	I/O	Function	Remark
1	TEST4	I	Test pin. Normally "H" or Open.	With pull-up resistor.
2	TEST5	I	Test pin. Normally "H" or Open.	With pull-up resistor.
3	CK8M	O	8M clock output terminal.	
4	COFS	O	Correction frame cycle signal output terminal. 7.35kHz.	
5	SPDA	O	Processor status signal output terminal. Correction processing check result, memory buffer capacity, etc.	
6	PFCK	O	Playback frame cycle signal output terminal. 7.35kHz.	
7	SUBSYC	O	Subcode sync signal output terminal.	
8	SUBQ	O	Subcode Q data output terminal.	
9	SBOK	O	Subcode Q data CRC check result output terminal. "H" when check result is OK.	
10	XI	I	X'tal resonator connection terminals.	
11	XO	O	X'tal resonator connection terminals.	
12	VDDD	–	Digital power supply terminal (+5V).	
13	GNDD	–	Digital grounding terminal.	
14	BUS0	I/O	Command and data send / receive I/O terminals.	Schmitt inputs.
17	BUS3	I/O	Command and data send / receive I/O terminals.	Schmitt inputs.
18	CCE	I	Command and data send / receive Chip Enable signal input terminal. "L" for making the bus line active.	

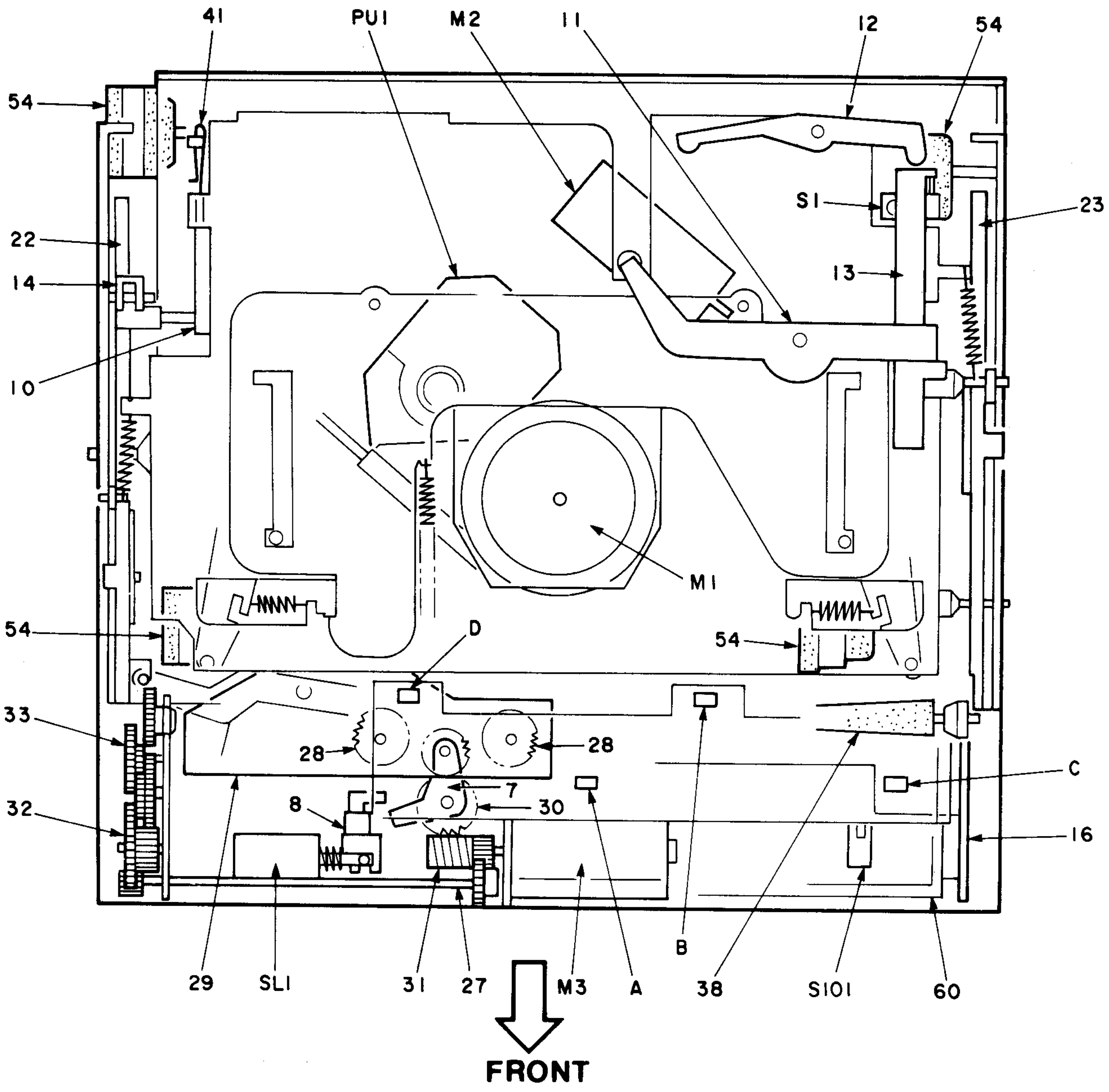
CIRCUIT DESCRIPTION

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>I/O</th><th>Function</th><th>Remark</th></tr>
<tr><td>19</td><td>BUCK</td><td>I</td><td>Command and data send / receive clock input terminal.</td><td></td></tr>
<tr><td>20</td><td>4MCK</td><td>O</td><td>4M clock output terminal (4.2336MHz).</td><td></td></tr>
<tr><td>21</td><td>$\overline{\text{RST}}$</td><td>I</td><td>Reset input terminal. "L" for internal system reset.</td><td>With pull-up resistor.</td></tr>
<tr><td>22</td><td>CCNT</td><td>I</td><td>Subcode Q data control bit update inhibit signal input terminal.
"H" for inhibiting update.</td><td>Emphasis, copy and channel information.</td></tr>
<tr><td>23</td><td>SUBD</td><td>O</td><td>Subcode P – W output terminal.</td><td></td></tr>
<tr><td>24</td><td>CLCK</td><td>I</td><td>Subcode P – W data read clock input terminal.</td><td></td></tr>
<tr><td>25</td><td>LOCK</td><td>O</td><td>Lock status output terminal. Goes "L" when the sync pattern in EFM signal of overrun detection data has not been detected for 17ms.</td><td></td></tr>
<tr><td>26</td><td>$\overline{\text{TEST1}}$</td><td>I</td><td>Test pin. Normally "H" or OPEN.</td><td>With pull-up resistor.</td></tr>
<tr><td>27</td><td>DFCT</td><td>O</td><td>Defect detect signal output terminal. VREF when detect is detected, HiZ in normal case</td><td></td></tr>
<tr><td>28, 29</td><td>TEL2, 1</td><td>O</td><td>Tracking gain adjustment analog switch output terminals. VREF or HiZ.</td><td></td></tr>
<tr><td>30</td><td>TGUL</td><td>O</td><td>Analog switch output terminal for switching the tracking servo loop phase compensator (low). HiZ (increased gain) when a shock is detected, VREF in normal case.</td><td></td></tr>
<tr><td>31</td><td>TGUH2</td><td rowspan="2">O</td><td rowspan="2">Analog switch output terminal for switching the tracking servo loop phase compensator (medium and high). HiZ (increased gain) when a shock is detected, VREF in normal case. TGUH1 is used in normal-speed playback, and TGUH2 is used in double-speed playback.</td><td rowspan="2"></td></tr>
<tr><td>32</td><td>TGU1</td></tr>
<tr><td>33</td><td>TKIC</td><td>O</td><td>Tracking actuator kick signal output terminal. "H" for kicking toward the outer edge.
"L" for kicking toward the inner edge.</td><td></td></tr>
<tr><td>34</td><td>FMON</td><td rowspan="2">O</td><td rowspan="2">Analog switch output terminals for switching feed servo ON / OFF.
<table>
<tr><th>Feed servo</th><th>FMON</th><th>$\overline{\text{FMON}}$</th></tr>
<tr><td>ON</td><td>HiZ</td><td>VREF</td></tr>
<tr><td>OFF</td><td>VREF</td><td>HiZ</td></tr>
</table></td><td rowspan="2"></td></tr>
<tr><td>35</td><td>$\overline{\text{FMON}}$</td></tr>
<tr><td>36</td><td>FMFB</td><td>O</td><td>Feed motor FWD / BWD feed control signal output terminal.
"H" for feed toward the outer edge. "L" for feed toward the inner edge.</td><td>3-level output.</td></tr>
<tr><td>37</td><td>TEST</td><td>I</td><td>Test pin. Normally "H" or OPEN.</td><td>With pull-up resistor.</td></tr>
<tr><td>38</td><td>DMON</td><td>O</td><td>Analog switch output terminal for switching the disc motor driver gain.</td><td></td></tr>
<tr><td>39</td><td>DMFC</td><td>O</td><td>Disc motor CLV servo AFC signal output terminal.
<table>
<tr><th>Command</th><th>DMFC output</th><th>Operation</th></tr>
<tr><td>DMFK</td><td>H</td><td>Motor acceleration</td></tr>
<tr><td>DMSV</td><td>PWH</td><td>CLV servo ON</td></tr>
<tr><td>DMBK</td><td>L</td><td>Motor deceleration</td></tr>
<tr><td>DMOFF</td><td>VREF</td><td>CLV servo OFF</td></tr>
</table></td><td>3-level output.</td></tr>
<tr><td>40</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo APC signal output terminal.</td><td>3-level output.</td></tr>
<tr><td>41</td><td>2VREF</td><td>I</td><td>Double reference voltage input terminal (VREF x 2).</td><td></td></tr>
<tr><td>42</td><td>SEL</td><td>O</td><td>Servo mode select signal output terminal.
<table>
<tr><th>SEL</th><th>LD ON / OFF</th><th>Focusing servo</th><th>Operation mode</th></tr>
<tr><td>L</td><td>OFF</td><td>OFF</td><td>LD OFF</td></tr>
<tr><td>HiZ</td><td>ON</td><td>OFF</td><td>Focusing search</td></tr>
<tr><td>H</td><td>ON</td><td>ON</td><td>Normal play</td></tr>
</table></td><td>3-level output.</td></tr>
<tr><td>43</td><td>FCSI</td><td>O</td><td>Focus actuator drive signal output terminal for focus search mode.
<table>
<tr><th>Command</th><th>FCSI output</th><th>Operation</th></tr>
<tr><td>FORST</td><td>H</td><td>Lens gets apart from disc.</td></tr>
<tr><td>FOSET</td><td>L</td><td>Lens gets closer to disc.</td></tr>
<tr><td>Other</td><td>HiZ</td><td>Other operation than focus search.</td></tr>
</table></td><td>3-level output.</td></tr>
</table>

CIRCUIT DESCRIPTION

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>I/O</th><th colspan="3">Function</th><th>Remark</th></tr>
<tr><td rowspan="6">44</td><td rowspan="6">FKIC</td><td rowspan="6">O</td><td colspan="3">Focus actuator drive signal output terminal for focus gain adjustment mode.</td><td></td></tr>
<tr><td>Other</td><td>HiZ</td><td>Other operation than focus search.</td><td rowspan="5">3-level output.</td></tr>
<tr><td>Command</td><td>FKIC output</td><td>Operation</td></tr>
<tr><td>FGASR</td><td>H</td><td>Lens gets apart from disc.</td></tr>
<tr><td>FGASS</td><td>L</td><td>Lens gets closer to disc.</td></tr>
<tr><td>Other</td><td>HiZ</td><td>Other operation than focus gain adjustment</td></tr>
<tr><td>45, 46</td><td>FEL2, 1</td><td>O</td><td colspan="3">Analog switch output terminals for focus gain adjustment.</td><td></td></tr>
<tr><td>47</td><td>FEI</td><td>I</td><td colspan="3">Focusing error signal input terminal.</td><td>Analog input.</td></tr>
<tr><td>48</td><td>TESH</td><td>I</td><td colspan="3">Analog switch input terminal for tracking error signal sample & hold operation.</td><td></td></tr>
<tr><td>49</td><td>TEOF</td><td>O</td><td colspan="3">Analog switch output terminal for tracking servo operation ON / OFF.
VREF when tracking servo is OFF.</td><td></td></tr>
<tr><td>50</td><td>SBAD</td><td>I</td><td colspan="3">Sub-beam addition signal input terminal.</td><td>Analog input.</td></tr>
<tr><td>51</td><td>RFRP</td><td>I</td><td colspan="3">RF ripple signal input terminal.</td><td></td></tr>
<tr><td>52</td><td>VREF</td><td>I</td><td colspan="3">Reference voltage input terminal (+2.2V).</td><td></td></tr>
<tr><td>53</td><td>RFI</td><td>I</td><td colspan="3">RF signal input terminal.</td><td>Analog input.</td></tr>
<tr><td>54</td><td>GNDA</td><td>–</td><td colspan="3">Analog ground terminal.</td><td></td></tr>
<tr><td>55</td><td>DTSC</td><td>O</td><td colspan="3">EFM signal inverted output terminal for data slice control.</td><td></td></tr>
<tr><td>56</td><td>EFMO</td><td>O</td><td colspan="3">EFM signal monitoring output terminal.</td><td>Binary data.</td></tr>
<tr><td>57</td><td>DTSC1</td><td>O</td><td colspan="3">EFM signal output terminal for data slice control.</td><td></td></tr>
<tr><td>58</td><td>VDDA</td><td>–</td><td colspan="3">Analog power supply terminal (+5V).</td><td></td></tr>
<tr><td>59</td><td>PDCNT</td><td>I</td><td colspan="3">PDO output control terminal. "L" for forcing PDO output to HiZ.</td><td></td></tr>
<tr><td>60</td><td>PDO</td><td>O</td><td colspan="3">EFM / PLCK phase error signal output terminal.</td><td>3-level output.</td></tr>
<tr><td rowspan="5">61</td><td rowspan="5">TMAX</td><td rowspan="5">O</td><td colspan="3">TMAX signal output terminal. HiZ when system-locked.</td><td rowspan="5">3-level output.</td></tr>
<tr><td>TMAX cycle</td><td>TMAX output</td><td></td></tr>
<tr><td>Longer than specified cycle</td><td>L</td><td></td></tr>
<tr><td>Shorter than specified cycle</td><td>H (2VREF)</td><td></td></tr>
<tr><td>Equal to specified cycle</td><td>HiZ</td><td></td></tr>
<tr><td>62</td><td>LPFN</td><td>I</td><td colspan="3">LPF amp inverted input terminal for PLL.</td><td></td></tr>
<tr><td>63</td><td>LPFO</td><td>O</td><td colspan="3">LPF amp output terminal for PLL.</td><td></td></tr>
<tr><td>64</td><td>VCOF</td><td>I</td><td colspan="3">VCO filter terminal.</td><td></td></tr>
<tr><td>65</td><td>VCOX</td><td>I</td><td colspan="3">External VCO clock input terminal.</td><td></td></tr>
<tr><td>66</td><td>PLCK</td><td>O</td><td colspan="3">Playback data read clock output terminal.</td><td></td></tr>
<tr><td>67</td><td>MOD0</td><td rowspan="3">I</td><td colspan="3" rowspan="3">Internal operation mode setting input terminals.</td><td rowspan="3"></td></tr>
<tr><td>68</td><td>MOD1</td></tr>
<tr><td>69</td><td>MOD2</td></tr>
<tr><td>70</td><td>WDCK</td><td>O</td><td colspan="3">Word clock output terminal. Normally 88.2kHz.</td><td></td></tr>
<tr><td>71</td><td>CHCK</td><td>O</td><td colspan="3">Channel clock output terminal. Normally 44.1kHz.</td><td></td></tr>
<tr><td>72</td><td>BCK</td><td>O</td><td colspan="3">Bit clock output terminal. Normally 1.4112MHz.</td><td></td></tr>
<tr><td>73</td><td>AOUT</td><td>O</td><td colspan="3">Audio data output terminal.</td><td></td></tr>
<tr><td>74</td><td>CKSE</td><td>I</td><td colspan="3">Internal clock select terminal.</td><td></td></tr>
<tr><td>75</td><td>DOUT</td><td>O</td><td colspan="3">Digital output terminal.</td><td></td></tr>
<tr><td>76</td><td>TEST2</td><td>I</td><td colspan="3">Test pin. Normally "H" or Open.</td><td>With pull-up resistor.</td></tr>
<tr><td>77</td><td>HS</td><td>O</td><td colspan="3">High-speed monitoring output terminal. "L" for double-speed operation.</td><td></td></tr>
<tr><td>78</td><td>EMPH</td><td>O</td><td colspan="3">Emphasis ON / OFF indication signal output terminal. "H" for emphasis ON.</td><td></td></tr>
<tr><td>79</td><td>TEST3</td><td>I</td><td colspan="3">Test pin. Normally "H" or Open.</td><td>With pull-up resistor.</td></tr>
<tr><td>80</td><td>MCK</td><td>O</td><td colspan="3">Master clock output terminal.</td><td></td></tr>
</table>

MECHANISM OPERATION DESCRIPTION

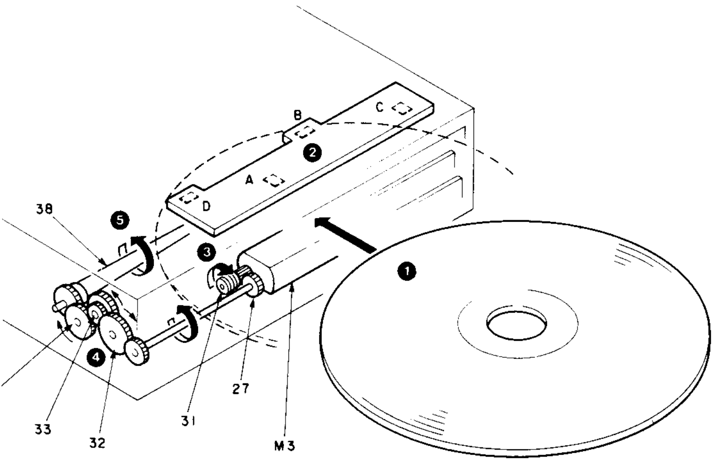

41
PU1
M2
11
12
54
54
S1
23
22
14
13
10
M1
54
D
54
33
28
28
C
7
8
30
32
16
B
29
SL1
31
27
M3
A
38
S101
60
FRONT

Note : Figures in the bracket ( ) in the operation description or accompanied with the part name in the diagram show the reference numbers in the Exploded View.

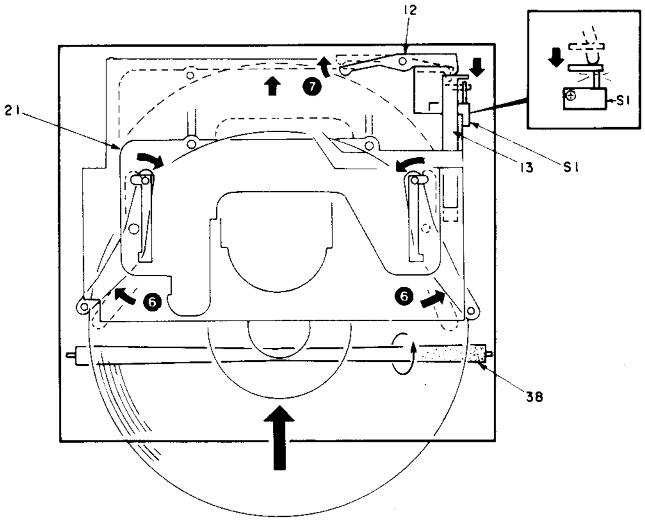
MECHANISM OPERATION DESCRIPTION

1. Loading

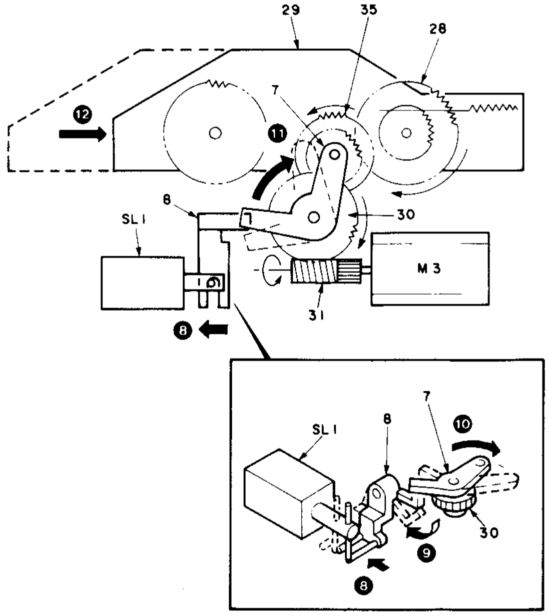
1. Insert a CD with the label side up.
2. Photosensors A, B and C detect the CD.
3. The loading motor (M3) starts rotation.
4. The rotation is transmitted via the worm gear (31), rear ass'y (27) then gears 1 to 3 (32, 33, 34).
5. The rubber roller (38) rotates, pulling the CD inside.


B
C
❷
A
D
38
❺
❸
❶
❹
34
33
32
31
27
M3

6. The CD pushes the slide plate (21).
7. The slide plate (21) pushes the SW arm (12) then the end SW (S1).

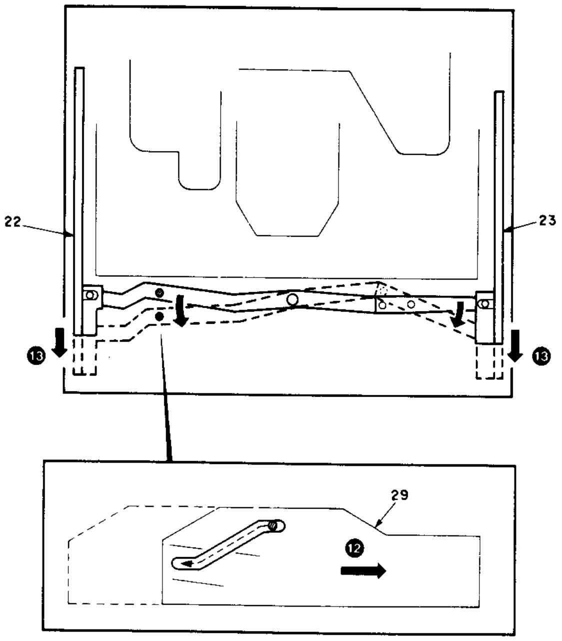

12
❼
S1
21
13
S1
❻
❻
38

8. Next, the microcomputer pulls the plunger (SL1) in.
9. The plunger (SL1) causes the trigger lever (8) to rotate.
10. The trigger lever (8) unlocks the friction arm (7).
11. The friction arm (7) causes, by means of the worm wheel gear (30), the friction gear (35) to be meshed with the rack gear (29) via a gear (28).
12. The rack gear (29) moves toward the right.

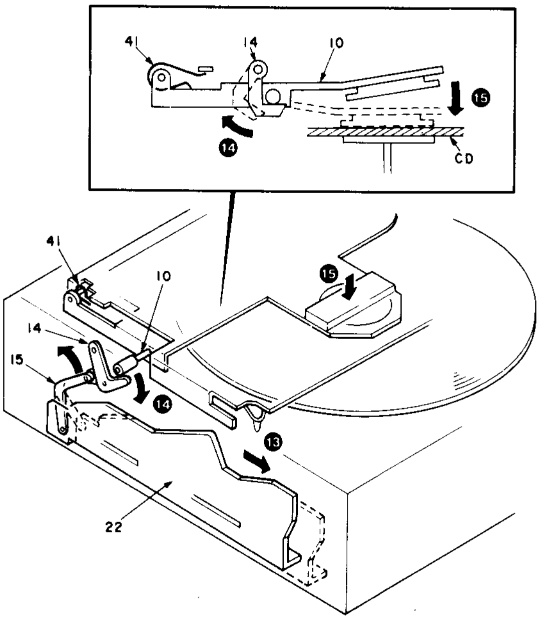

29
35
28
7
⓬
⓫
8
SL1
30
M3
31
❽
SL1
8
7
❿
30
❾
❽

MECHANISM OPERATION DESCRIPTION

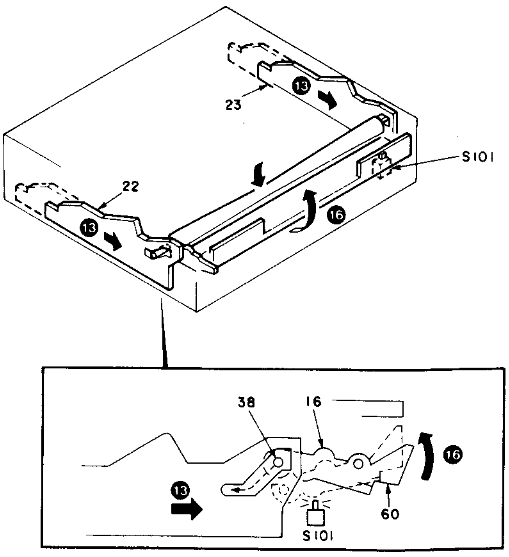
13. The lever of the chassis ass'y is moved by the groove on the rack gear (29), and the cam plates (22, 23) are moved forward.



14. The cam plates (22, 23) pulls levers 1 and 2 (15, 14), unlocking the clamp lever (10).
15. The clamp lever (10) chucks the CD onto the turntable (5) by means of the clamper SP (41).

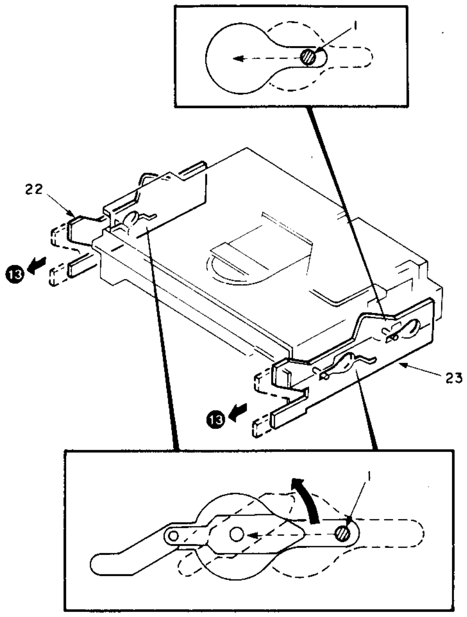

41
14
10
⑮
⑭
CD
41
10
⑮
14
15
⑭
⑬
22

16. The rubber roller (38) is moved down by the grooves on the cam plates (22, 23), and the lever (16) pushes the down SW (S101) to stop the loading motor. The door (60) moves up.

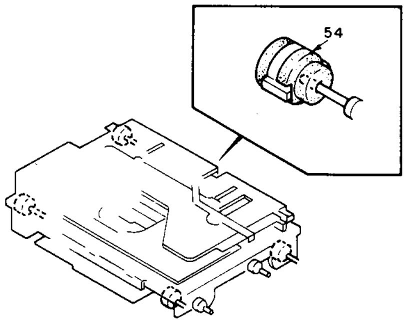

23
⑬
S101
22
⑯
⑬
38
16
⑯
⑬
60
S101

MECHANISM OPERATION DESCRIPTION

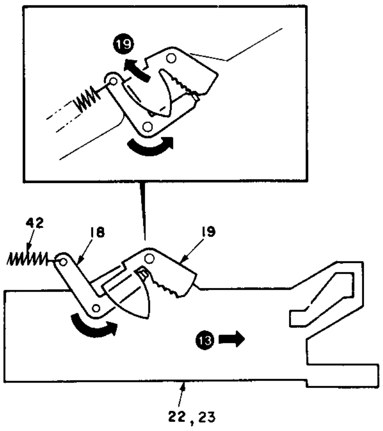
17. The cam plates (22, 23) unclamp the pickup chassis (1).



18. The pickup chassis (1) is separated from the chassis by the damper (54).

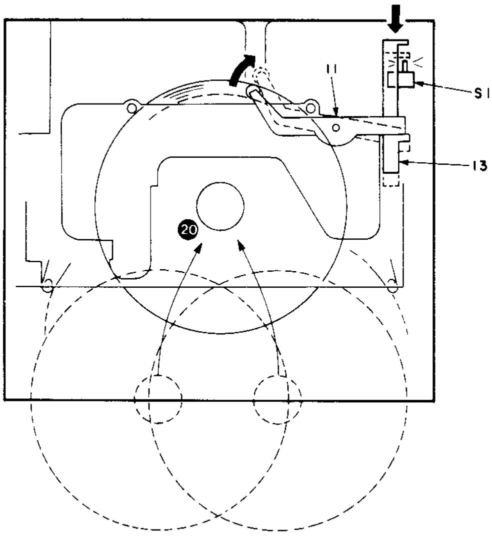


19. The sawtooth plate (19) and levers (18, 20) compensate for the eccentricity of the damper (54) due to the attaching angle.

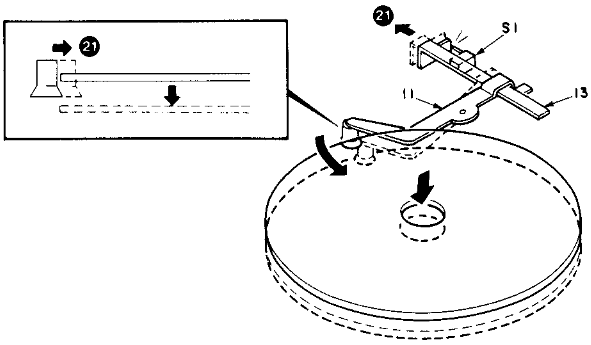


MECHANISM OPERATION DESCRIPTION

20. With an 8 cm CD, it is guided to the center position while the slide plate (21) is not moved. Then, the end SW (S1) is pushed by the levers (11, 13) and the chucking operation starts.

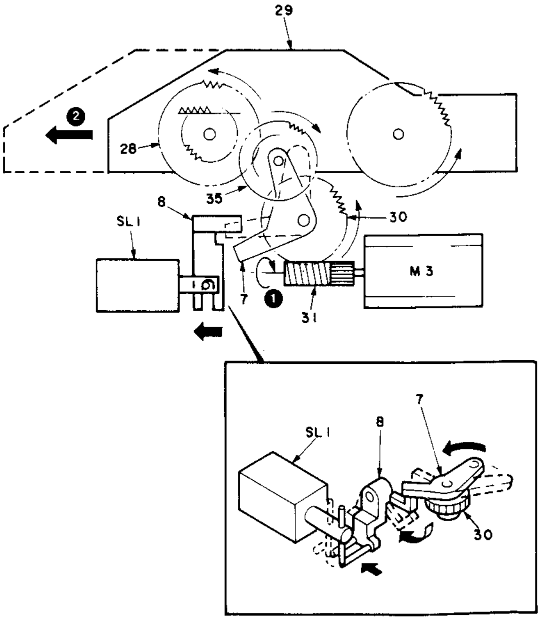


21. At the end of chucking operation, the lever (11) is separated from the 8 cm CD, and the end SW (S1) is released. This results in the detection of 8 cm CD.



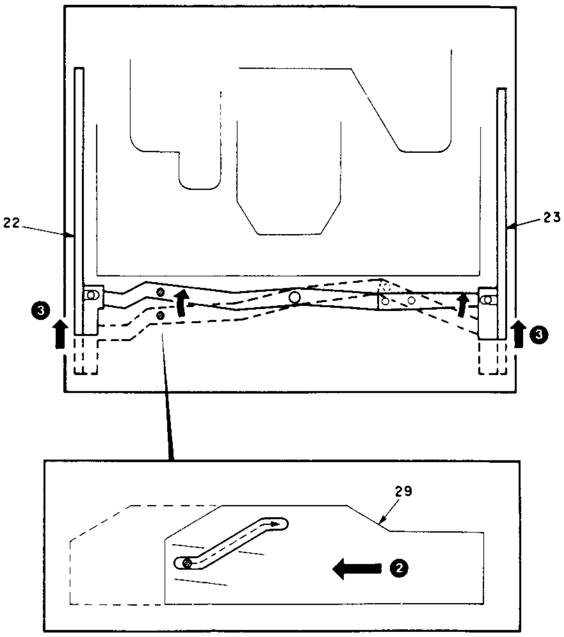
2. Ejection

1. When the Eject SW is pressed, the loading motor starts inverse rotation. At the same time, the plunger (SL1) is pulled and the trigger lever (8) is rotated to unlock the friction arm (7).
2. The worm wheel gear (30) rotates inversely to rotate the gear (28) on the eject side. This causes the rack gear (29) to be moved toward the left.

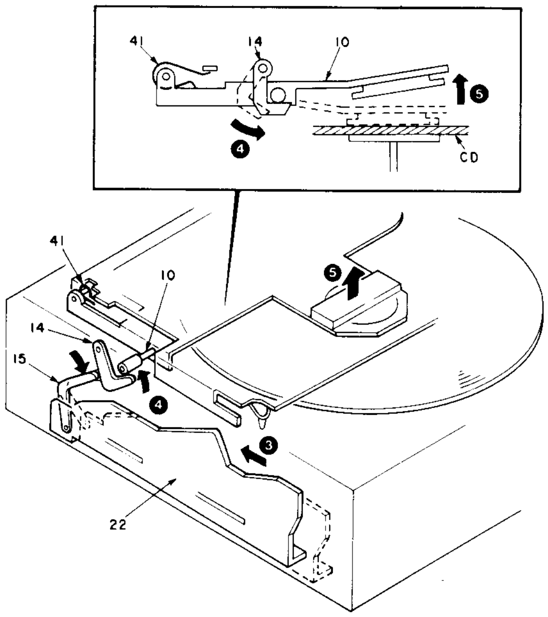


MECHANISM OPERATION DESCRIPTION

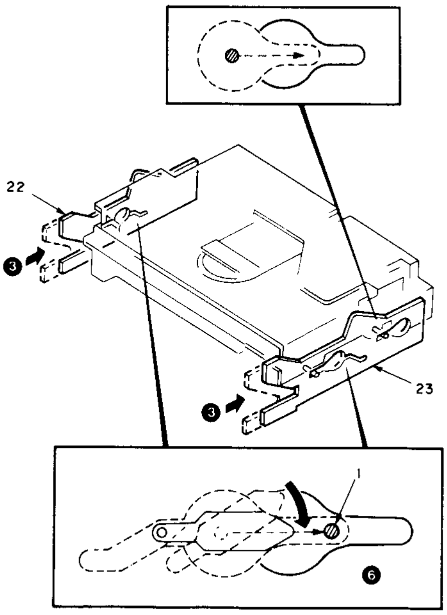
3. Cam plates L and R (22, 23) are moved by the grooves of the rack gear (29).



4. Due to the movement of cam plates L and R (22, 23), the levers (15, 14) are moved.
5. The levers (15, 14) push the clamp lever (10) upward.


41
14
10
❺
❹
CD
41
10
❺
14
15
❹
❸
22

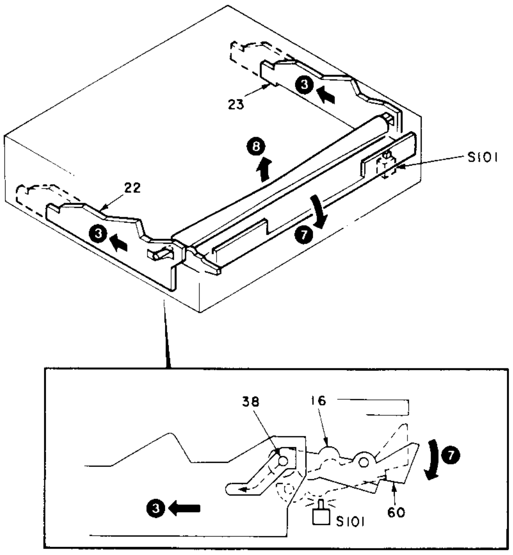
6. The pickup chassis (1) is fixed by the grooves on the cam plates (22, 23).



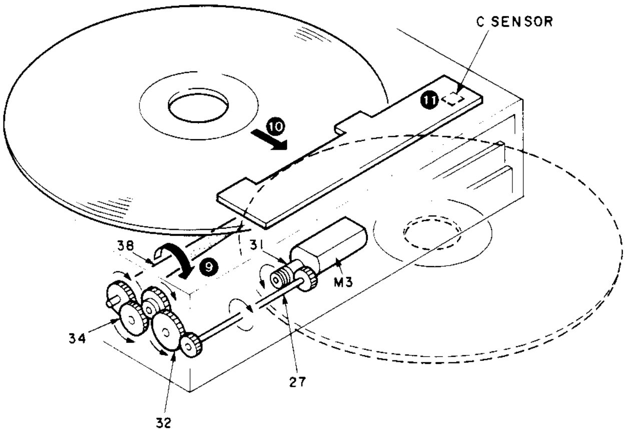
KDC-94R

MECHANISM OPERATION DESCRIPTION

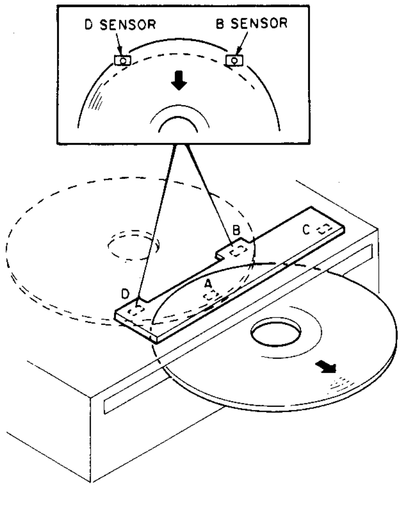
7. On the front side, the lever (16) rotates to push the door (60) downward.
8. This moves the roller (38) upward.


23
❸
❽
S101
22
❸
❼
38
16
❼
❸
S101
60

9. Due to the inverse rotation of the loading motor (M3), the roller (38) rotates in the ejecting direction.
10. The CD is ejected.
11. When the C sensor (rightmost end) goes OFF, loading motor is stopped.


C SENSOR
⓫
❿
38
❾
31
M3
34
27
32

12. With an 8 cm CD, the loading motor is stopped when the B and D sensors go OFF.


D SENSOR
B SENSOR
B
C
A
D

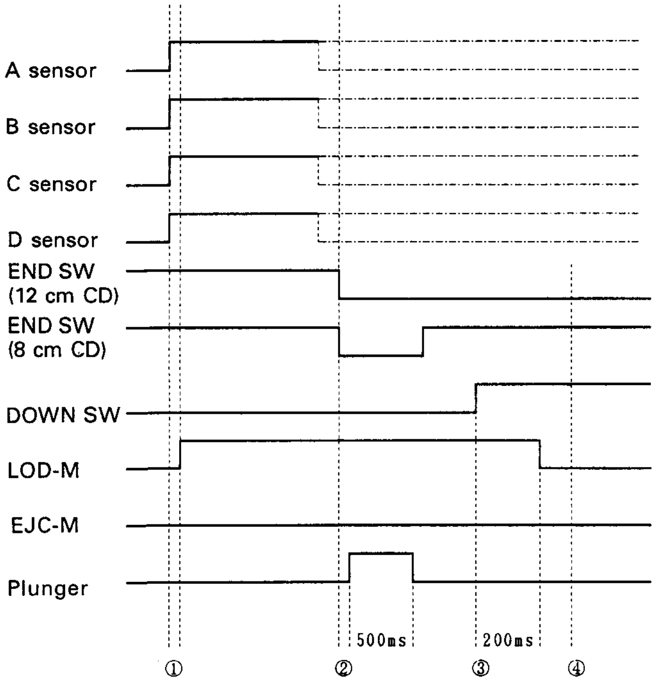
MECHANISM OPERATION DESCRIPTION

3. Mechanism operation timing

3-1. Loading

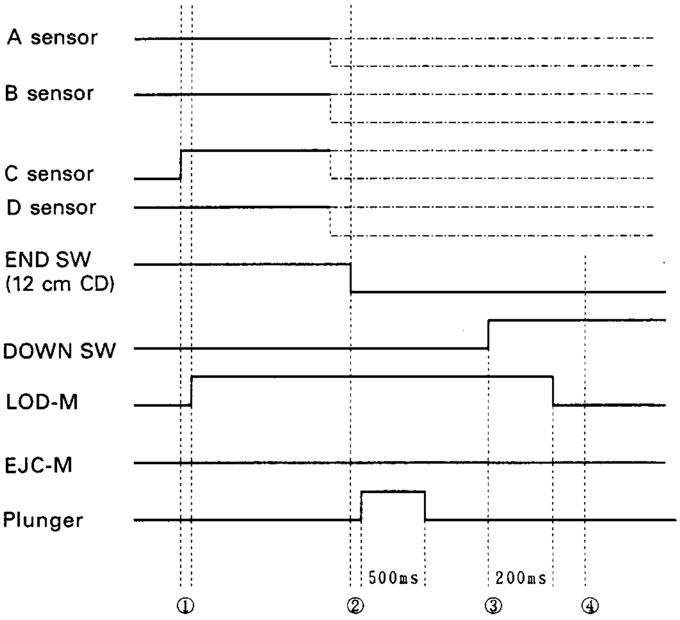
- **Loading from No Disc status**

① When any of the A/B/C/D sensors goes ON, the motor is turned ON in the loading direction.
② When the END switch goes ON, the plunger is turned ON for 500ms.
③ When the DOWN switch is ON for 200ms, the loading motor is turned OFF.
④ IF the END switch is ON, the CD is a 12 cm CD.


A sensor
B sensor
C sensor
D sensor
END SW (12 cm CD)
END SW (8 cm CD)
DOWN SW
LOD-M
EJC-M
Plunger
500ms
200ms
①
②
③
④

- **Loading of 12 cm CD from Ejected status (A, B and D sensors ON)**

① When the C sensor goes ON, the motor is turned ON.
If more than 15 seconds elapse in the eject condition, it will automatically load and stop.
② When the END switch goes ON, the plunger is turned ON for 500ms.
③ When the DOWN switch is ON for 200ms, the loading motor is turned OFF.
④ If the END switch is ON, this means that the CD is a 12 cm CD.


A sensor
B sensor
C sensor
D sensor
END SW (12 cm CD)
DOWN SW
LOD-M
EJC-M
Plunger
500ms
200ms
①
②
③
④

MECHANISM OPERATION DESCRIPTION

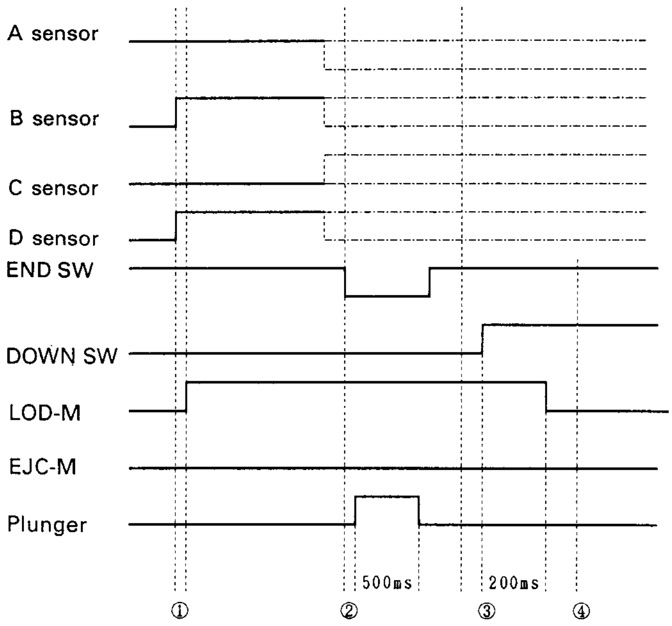
- **Loading of 8 cm CD from Ejected status (A sensor ON)**

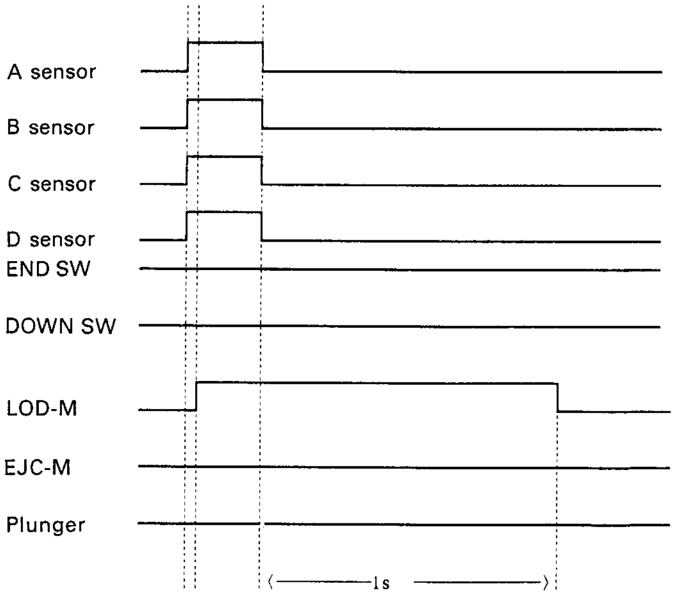
① When the B/D sensors go ON, the motor is turned ON (pushing the CD).
If more than 15 seconds elapse in the ejection condition, it will automatically load and stop.
② When the END switch goes ON, the plunger is turned ON for 500ms.
③ When the DOWN switch is ON for 200ms, the loading motor is turned OFF.
④ IF the END switch is ON, the CD is a 12 cm CD.

- **Timing when disc is removed after the start of loading**

* In case of an 8 cm CD, as there is a position with which all of the sensors go OFF in the course of loading, this ALL OFF condition is masked for one second. If the condition lasts for a longer period, the processing is aborted judging that the disc has been removed.

* In case the loading processing does not complete in 6 seconds after the start of loading, the eject operation starts. If the sensor position remains the same (i.e. only the A sensor is ON) since the start of loading, the processing is aborted judging that the disc is deviated from the roller.


A sensor
B sensor
C sensor
D sensor
END SW
DOWN SW
LOD-M
EJC-M
Plunger
500ms
200ms
①
②
③
④


A sensor
B sensor
C sensor
D sensor
END SW
DOWN SW
LOD-M
EJC-M
Plunger
1s

MECHANISM OPERATION DESCRIPTION

3-2. Ejection

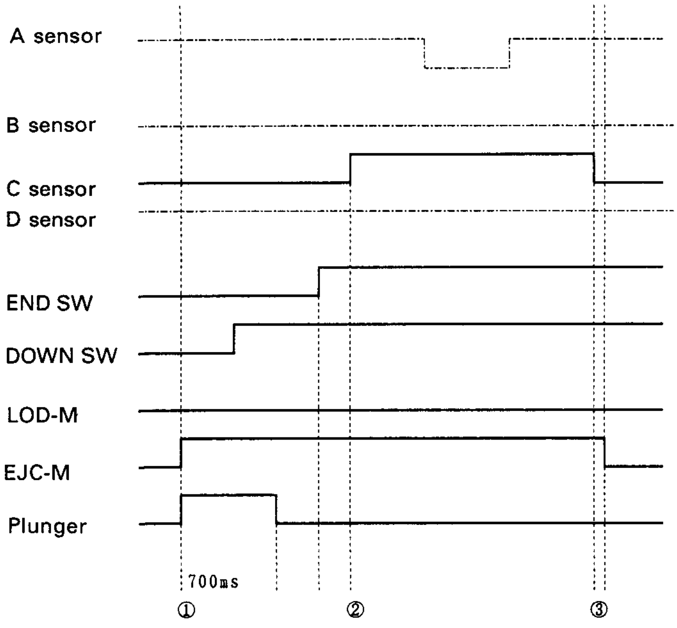
- **Ejection of 12 cm CD from the Chucking Completed status**

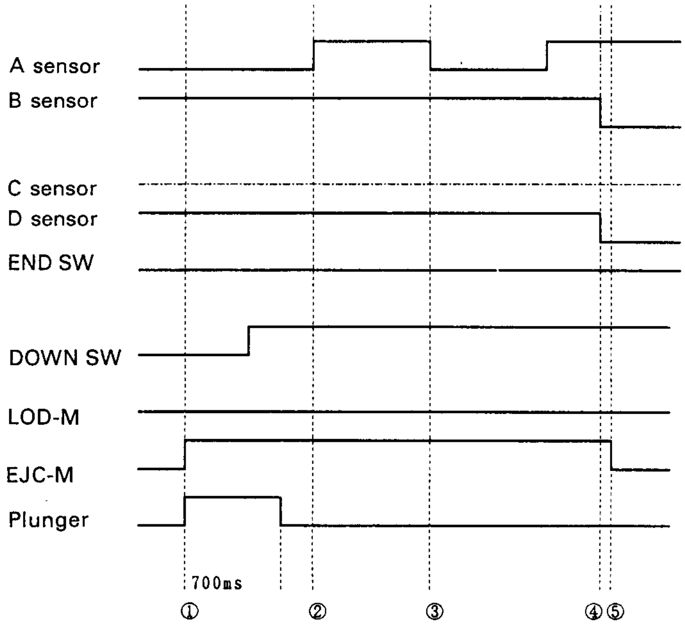
① The eject motor is turned ON.
The plunger is turned ON for 700ms.
② The C sensor goes ON.
The DOWN switch is turned OFF.
③ The END switch is turned OFF.
Ejection completes when the C sensor has gone OFF.

- **Ejection of 8 cm CD from the Chucking Complete status**

① The eject motor is turned ON.
The plunger is turned ON for 700ms.
② The A sensor goes ON.
The DOWN switch is turned OFF.
③ The A sensor goes OFF.
④ The A sensor goes ON.
The END switch is turned OFF.
⑤ Ejection completes when the B and D sensors have gone OFF.
The eject motor is turned OFF.

* Eject motor means reverse rotation of loading motor.



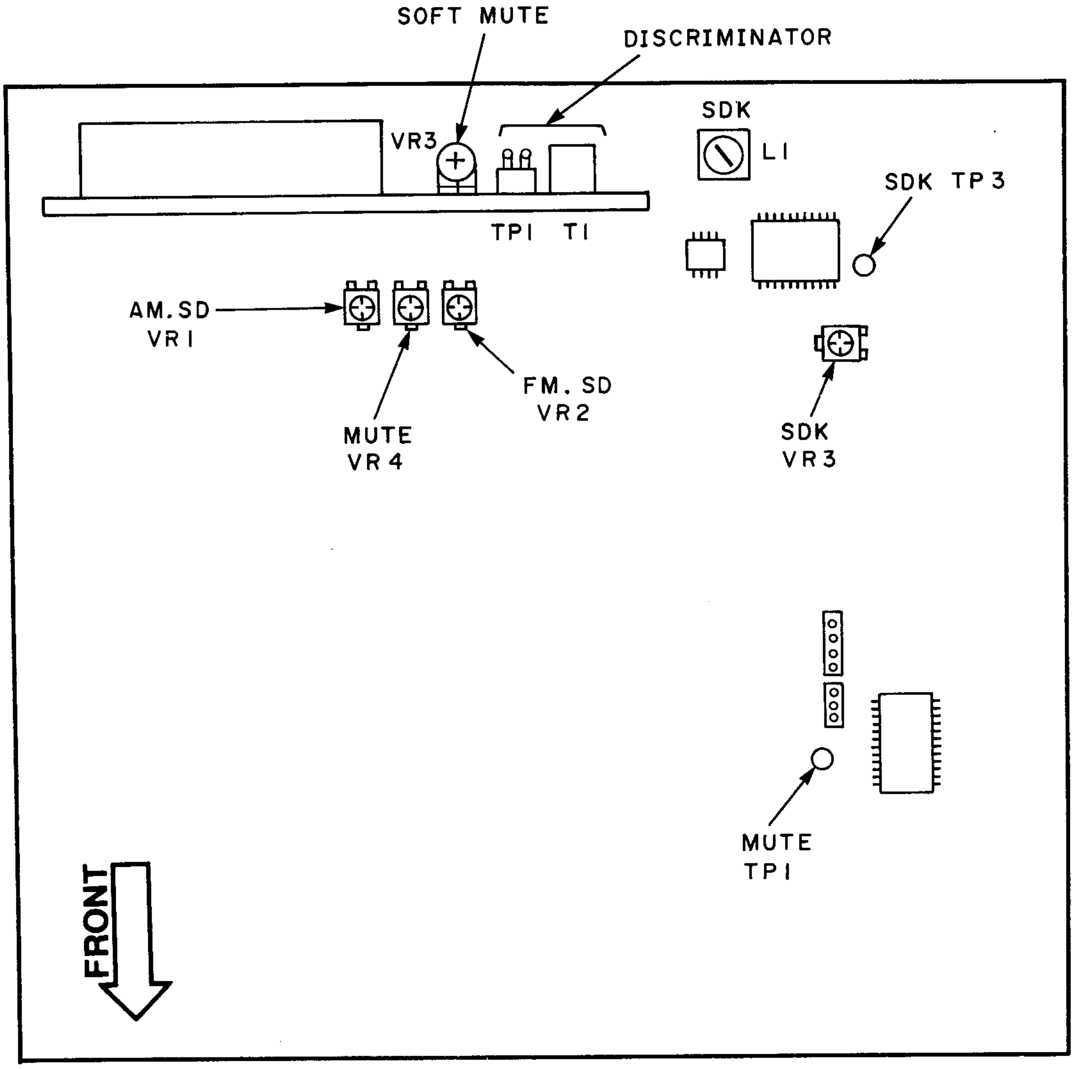


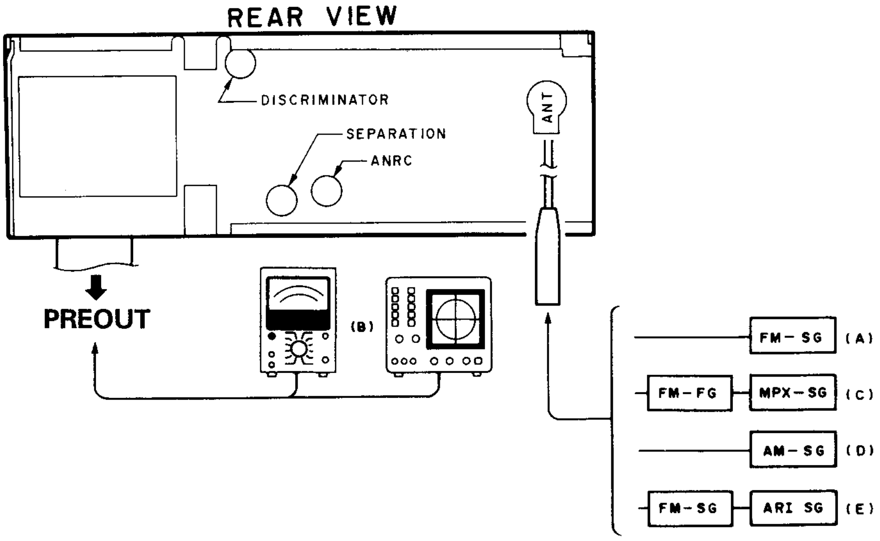
ADJUSTMENT

Set the controls and switches as follows.
BALANCE :center position
FADER :center position

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER(RECEIVER) SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION							
1	DISCRIMINATOR	(A) 98.1MHz 0 dev 60dBμ(ANT input)	Connect a DC voltmeter to TP1.(X89-122)	FM 98.1MHz	T1 (X89-122)	0V	(a)
2	SEPARATION	(C) 98.1MHz 1kHz,±40kHz dev Pilot:±6kHz dev Selector:L or R 60dBμ(ANT input)	(B)	FM 98.1MHz	VR2 (X89-122)	Adjust it so that the crosstalk from L to R and R to L become minimum.	(b)
3	ANRC	(C) 98.1MHz 1kHz,±40kHz dev Pilot:±6kHz dev Selector:L or R 35dBμ(ANT input)	(B)	FM 98.1MHz	VR1 (X89-122)	Separation 10dB	(c)
4	MUTE	(A) 98.1MHz 1kHz, 40kHz dev 5dBμ(ANT input)	Connect an osilloscope to TP1(X25-)	FM 98.1MHz	VR4 (X25-)	High-Low(voltage)	(d)
5	SEEK STOP LEVEL	(A) 98.1MHz 1kHz,±40kHz dev 20dBμ(ANT input)	–	FM SEEK:ON 98.1MHz	VR2 (X25-)	STOP	(e)
6	SOFT MUTE LEVEL	(A) 98.1MHz 1kHz,±40kHz dev 60dBμ→No input	(B)	FM 98.1MHz	VR3 (X89-122)	Output Noise level -25dB (When not add any signal to ANT terminal)	(f)
SDK SECTION							
<1>	DK LEVEL	(E) 98.1MHz 0 dev SK 5.33% DK 30%,BK 60% 60dBμ(ANT input)	Connect an AC voltmeter to TP3. (X25-)	FM 98.1MHz SDK:ON	L1 VR3 (X25-)	Maximum	(g)
AM SECTION							
(1)	STOP LEVEL	(D) 999kHz 400Hz,30% mod 35dBμ(ANT input)	–	AM 999kHz	VR1 (X25-)	STOP	(h)

ADJUSTMENT

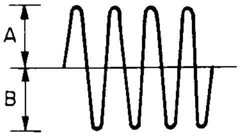

SOFT MUTE
DISCRIMINATOR
SDK
VR3
L1
SDK TP3
TP1
T1
AM.SD
VR1
FM.SD
VR2
MUTE
VR4
SDK
VR3
MUTE
TP1
FRONT


REAR VIEW
DISCRIMINATOR
SEPARATION
ANRC
ANT
PREOUT
(B)
FM-SG
(A)
FM-FG
MPX-SG
(C)
AM-SG
(D)
FM-SG
ARI SG
(E)

ADJUSTMENT

1. Tracking offset adjustment

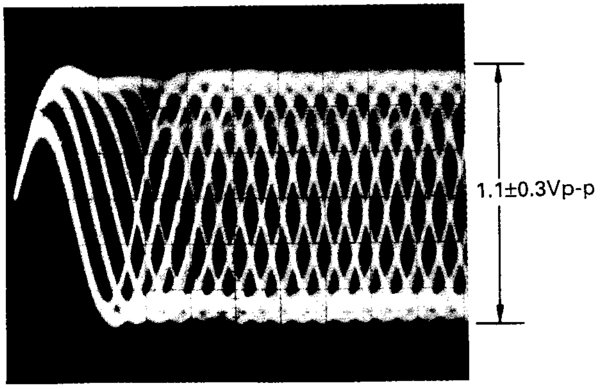
1. Connect a test jumper wire between the test point (TEST2) and (+5V).
2. Connect a test jumper wire between the test point (TOFF) and (Vref).
3. Connect an oscilloscope between the test point (TE) and (Vref).
4. Put the set into play mode by loading the disc.
5. Adjust VR2 so that the oscilloscope reading is symmetrical in relation to 0V.
6. After adjusting, reset 1 and 2 as original.



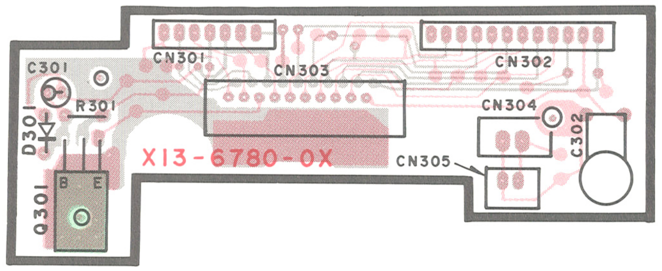
2. Focus offset adjustment

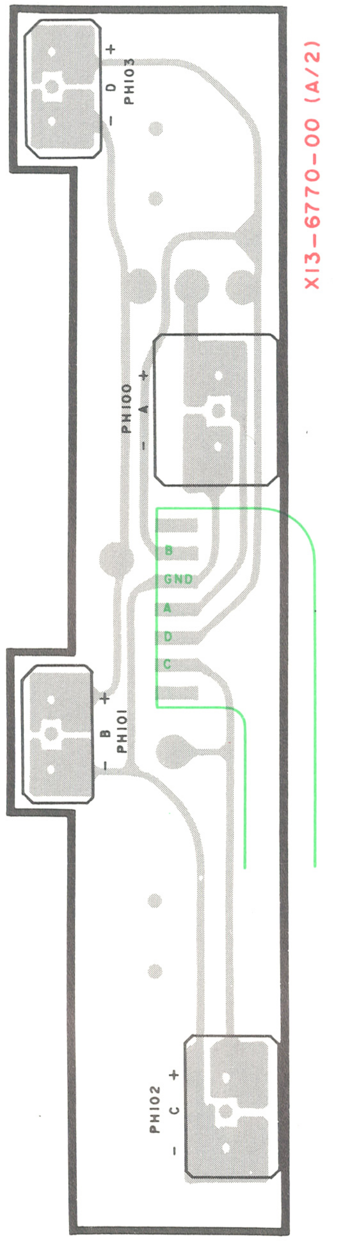
1. Connect an oscilloscope to the test point (RF).
2. Put the set into play mode by loading the disc.
3. Adjust VR1 so that the oscilloscope waveform eye pattern is good.
   A good eye pattern means that the diamond shape (◊) in the center of the oscilloscope can be clearly distinguished.

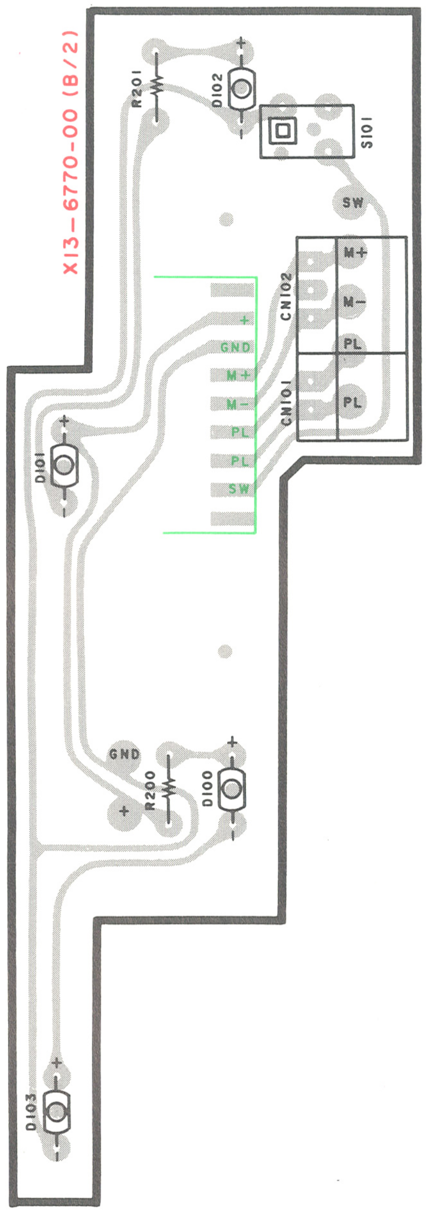
Volt/Div : 200mV
Timer/Div : 0.5µsec.

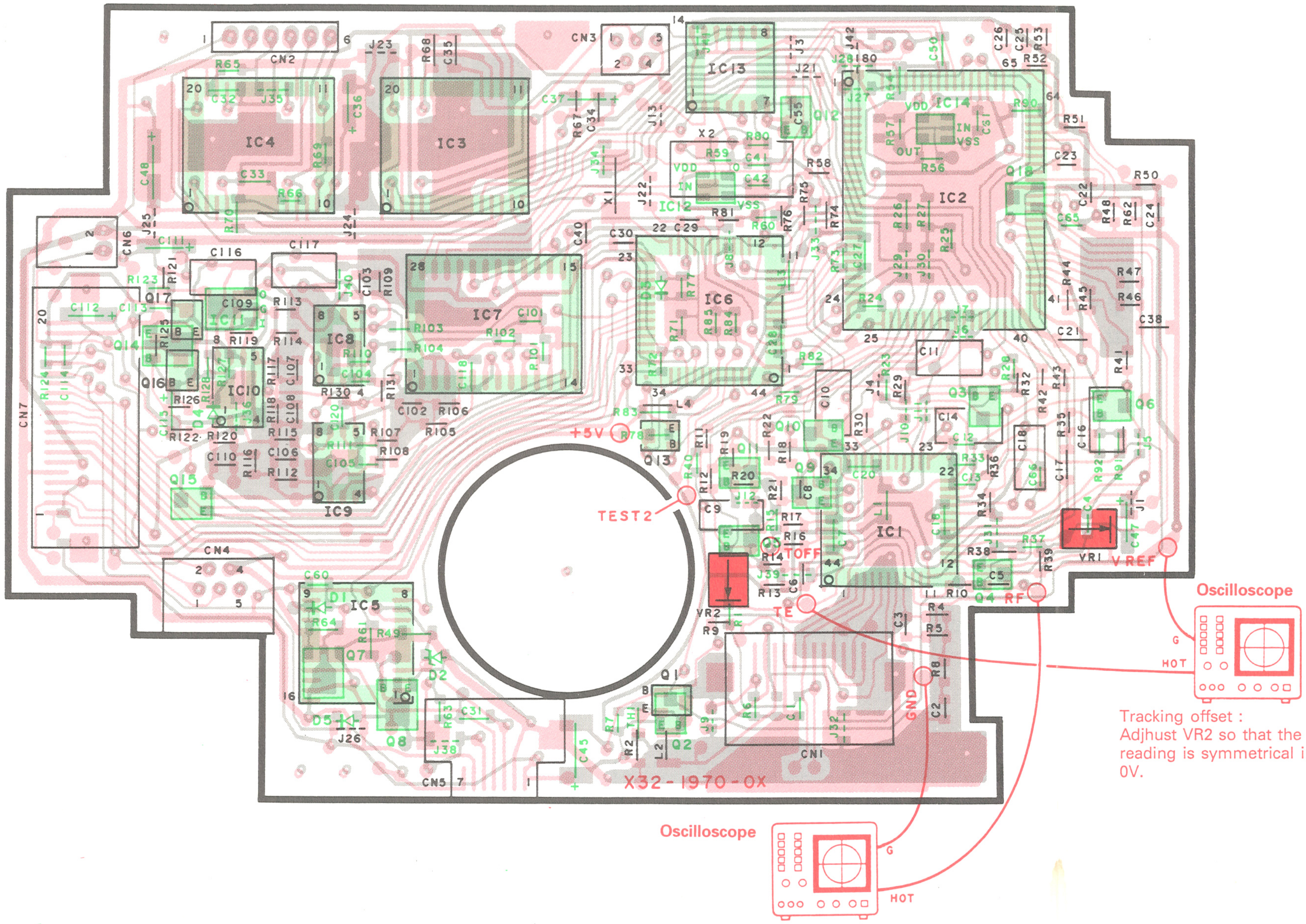


PC BOARD (COMPONENT SIDE VIEW) : MECHANISM


CN301
CN303
CN302
C301
R301
D301
Q301
B E
CN304
C302
CN305
X13-6780-0X


X13-6770-00 (A/2)
PH103
PH100
PH101
PH102
B
GND
A
D
C


X13-6770-00 (B/2)
R201
D102
S101
SW
CN102
CN101
M+
M−
PL
GND
D101
R200
D100
D103

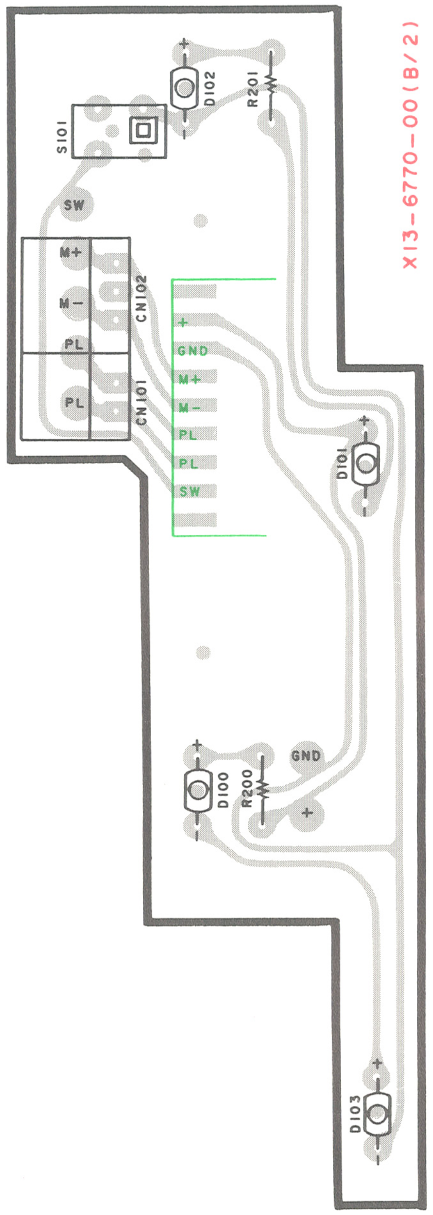

IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
CN1
CN2
CN3
CN4
CN5
CN6
CN7
TEST2
+5V
TOFF
TE
RF
GND
VR1
VR2
V REF
X1
X2
X32-1970-0X
Oscilloscope
G
HOT

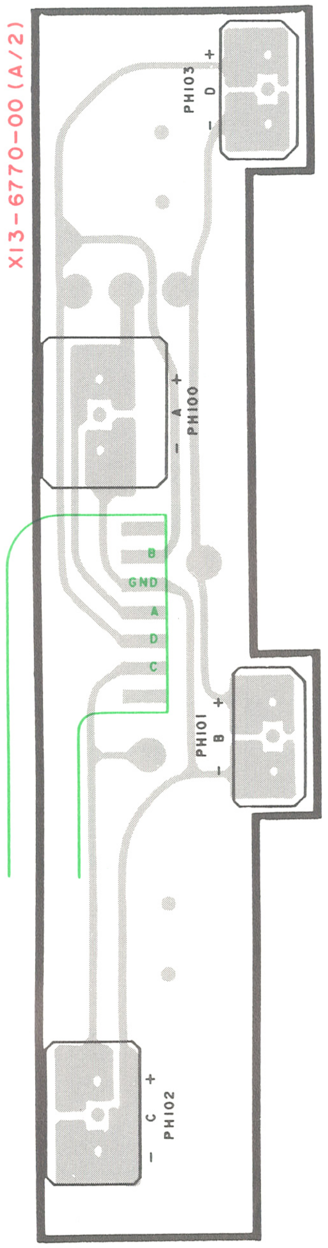
Tracking offset :
Adjhust VR2 so that the oscilloscope reading is symmetrical in relation to 0V.

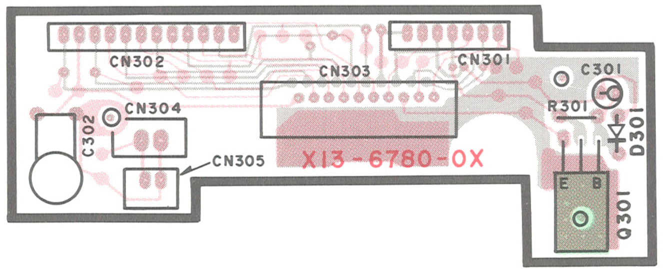
Focus offset :
Adjhust VR2 so that the oscilloscope wave from eye patter is good.

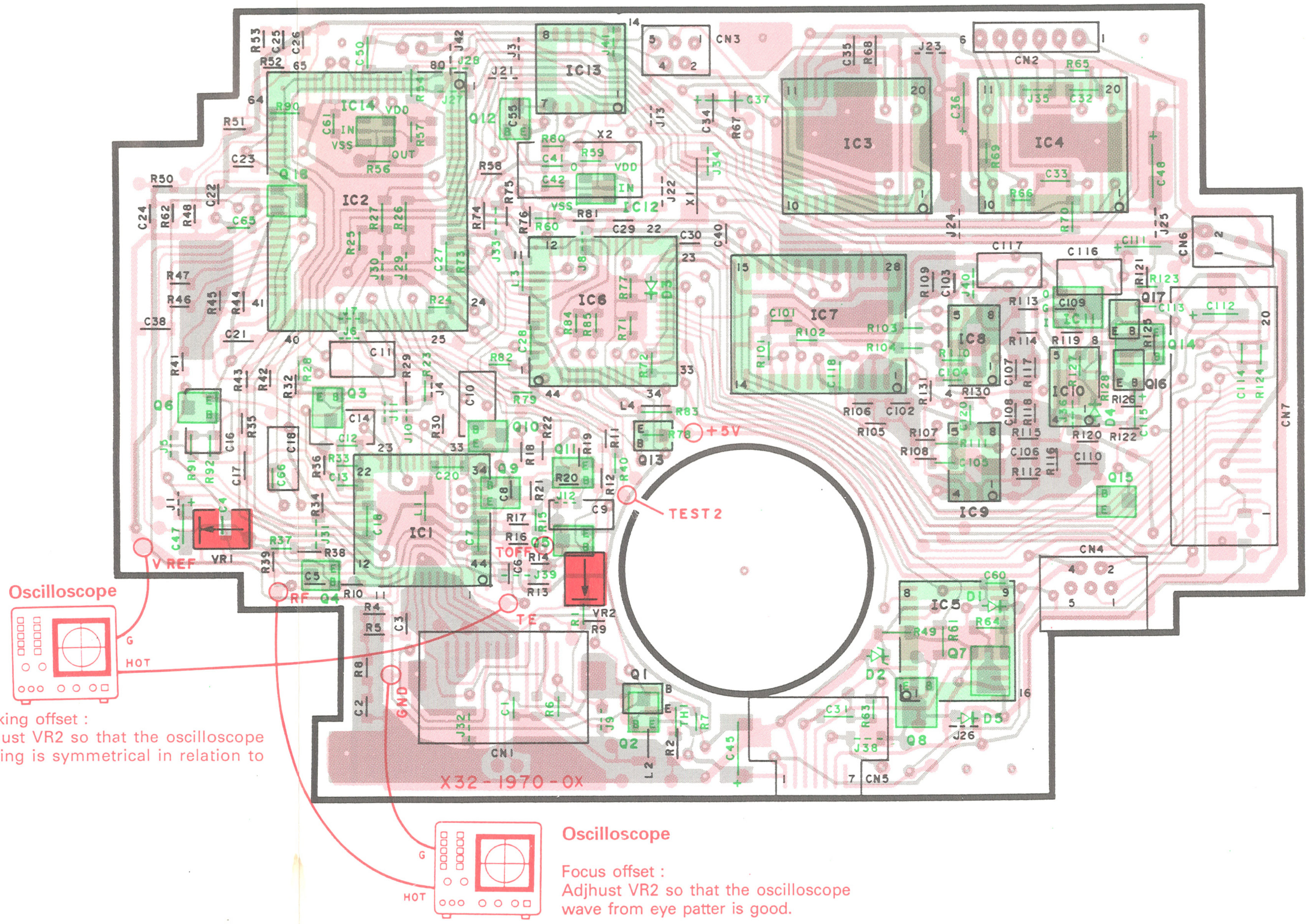
Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (FOIL SIDE VIEW) : MECHANISM


X13-6770-00 (B/2)
S101
D102
R201
SW
M+
M−
PL
PL
CN102
CN101
GND
M+
M−
PL
PL
SW
D101
D100
R200
GND
D103


X13-6770-00 (A/2)
PH103
PH100
B
GND
A
D
C
PH101
PH102


CN302
CN301
CN303
C301
CN304
R301
C302
CN305
X13-6780-0X
D301
E B
Q301


X32-1970-0X
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
CN1
CN2
CN3
CN4
CN5
CN6
CN7
VR1
VR2
V REF
RF
TE
GND
TOFF
+5V
TEST 2
G
HOT
G
HOT

Oscilloscope

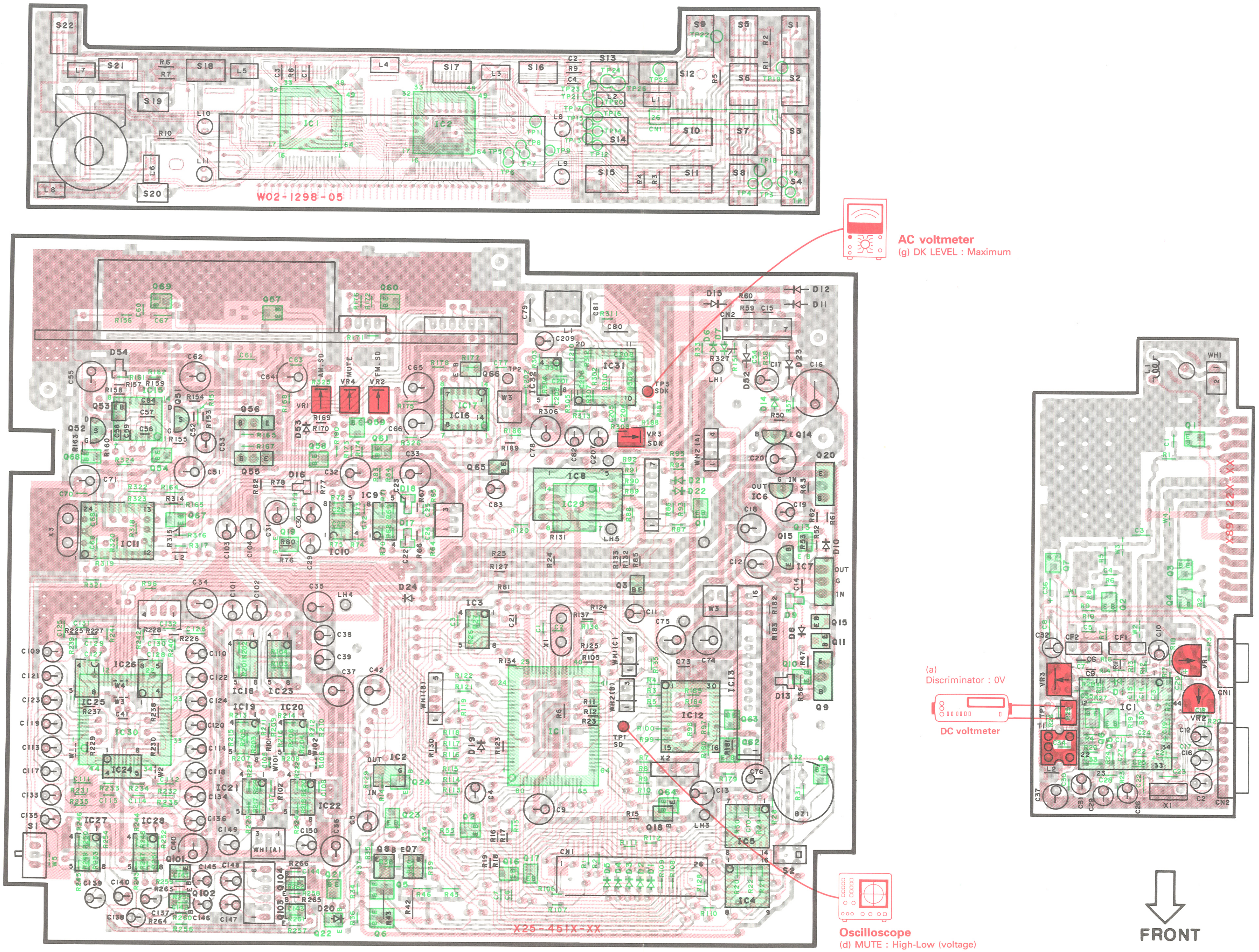
Tracking offset :
Adjhust VR2 so that the oscilloscope reading is symmetrical in relation to 0V.

Oscilloscope

Focus offset :
Adjhust VR2 so that the oscilloscope wave from eye patter is good.

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (COMPONENT SIDE VIEW) : UNIT


W02-1298-05
X25-451X-XX
X89-122X-XX
IC1
IC2
IC3
IC8
IC31
VR1
VR2
VR3
VR4
TP1 SD
TP3 SDK
VR3 SDK
AM.SD
MUTE
FM.SD
CN1
CN2
FRONT

AC voltmeter
(g) DK LEVEL : Maximum

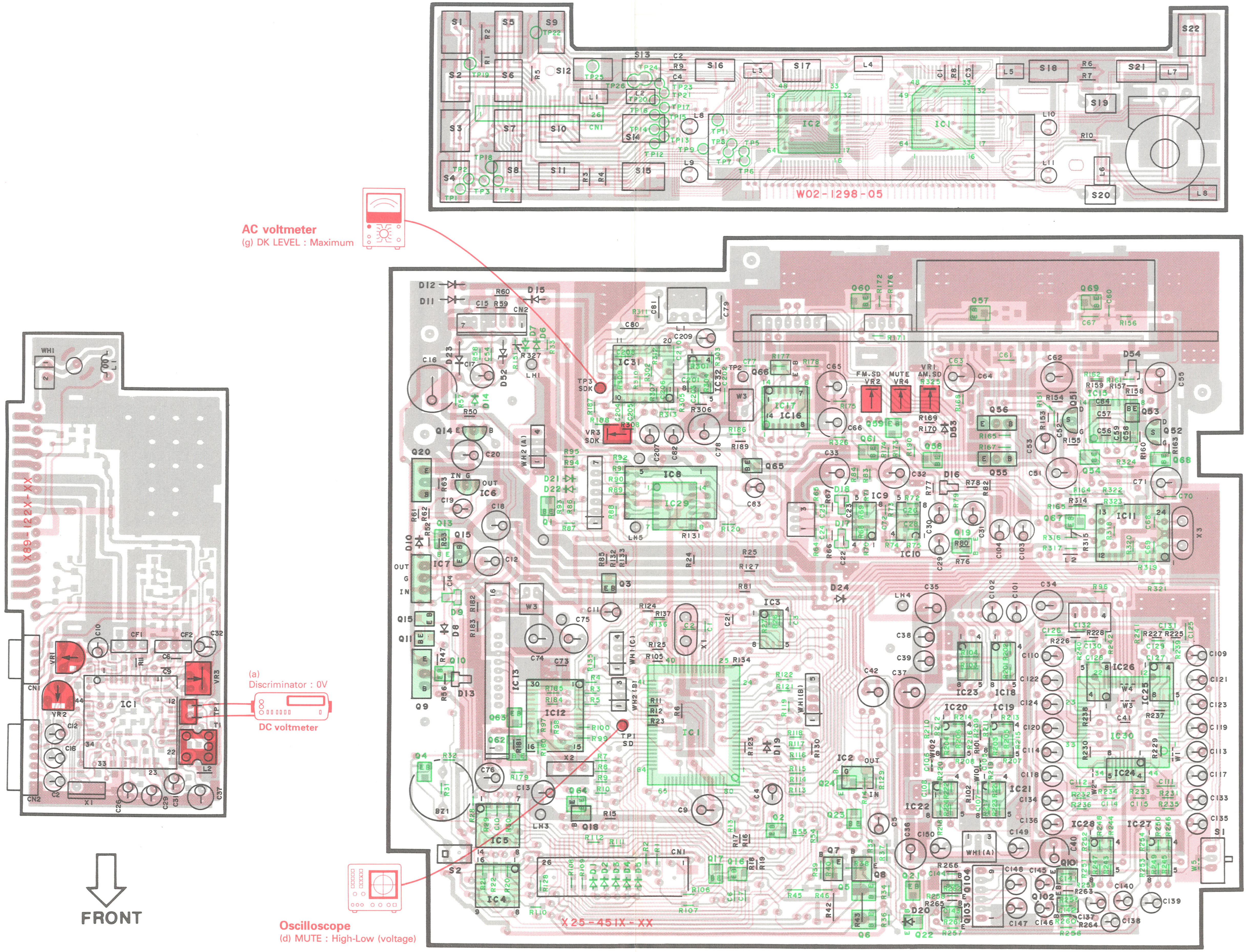
(a)
Discriminator : 0V

DC voltmeter

Oscilloscope
(d) MUTE : High-Low (voltage)

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (FOIL SIDE VIEW)) : UNIT


W02-1298-05
X25-451X-XX
X89-122X-XX
FRONT
TP3 SDK
VR3 SDK
FM.SD VR2
MUTE VR4
VR1 AM.SD
TP1 SD
VR1
VR2
VR3
TP
T1

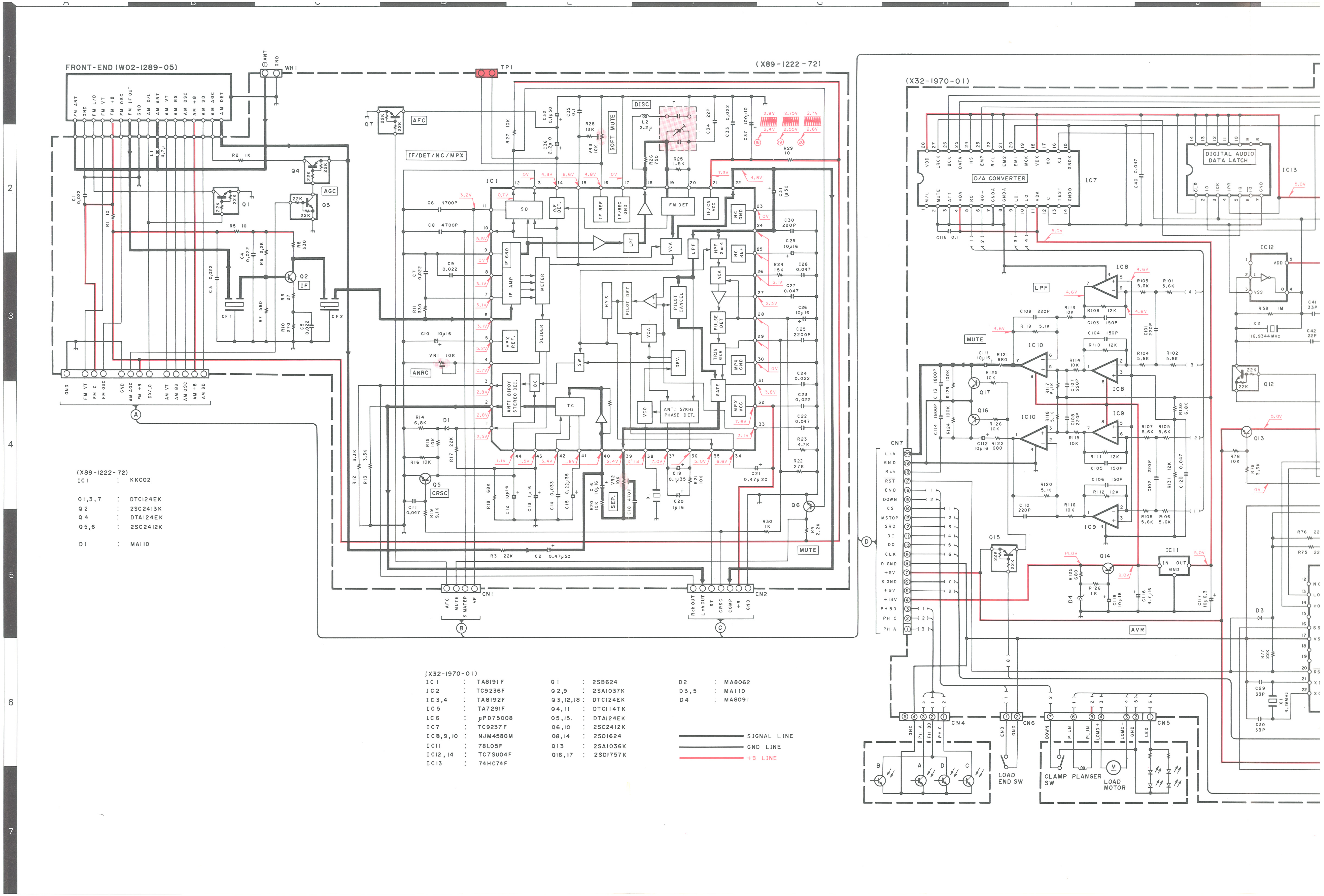
AC voltmeter
(g) DK LEVEL : Maximum

(a)
Discriminator : 0V

DC voltmeter

Oscilloscope
(d) MUTE : High-Low (voltage)

Refer to the schematic diagram for the values of resistors and capacitors.


FRONT-END (W02-1289-05)
(X89-1222-72)
(X32-1970-01)
TP1
WH1
ANT
GND
AFC
AGC
IF
IF/DET/NC/MPX
IC1
DISC
T1
SOFT MUTE
CF1
CF2
ANRC
CRSC
MUTE
SEP.
CN1
CN2
AFC
MUTE
S MATER
VR
Rch OUT
Lch OUT
ST
CRSC
COMP
+B
GND
D/A CONVERTER
IC7
DIGITAL AUDIO DATA LATCH
IC13
IC12
IC8
IC9
IC10
IC11
LPF
MUTE
AVR
CN7
CN4
CN5
CN6
LOAD END SW
CLAMP SW
PLANGER
LOAD MOTOR
SIGNAL LINE
GND LINE
+B LINE

(X89-1222-72)
IC1 : KKC02

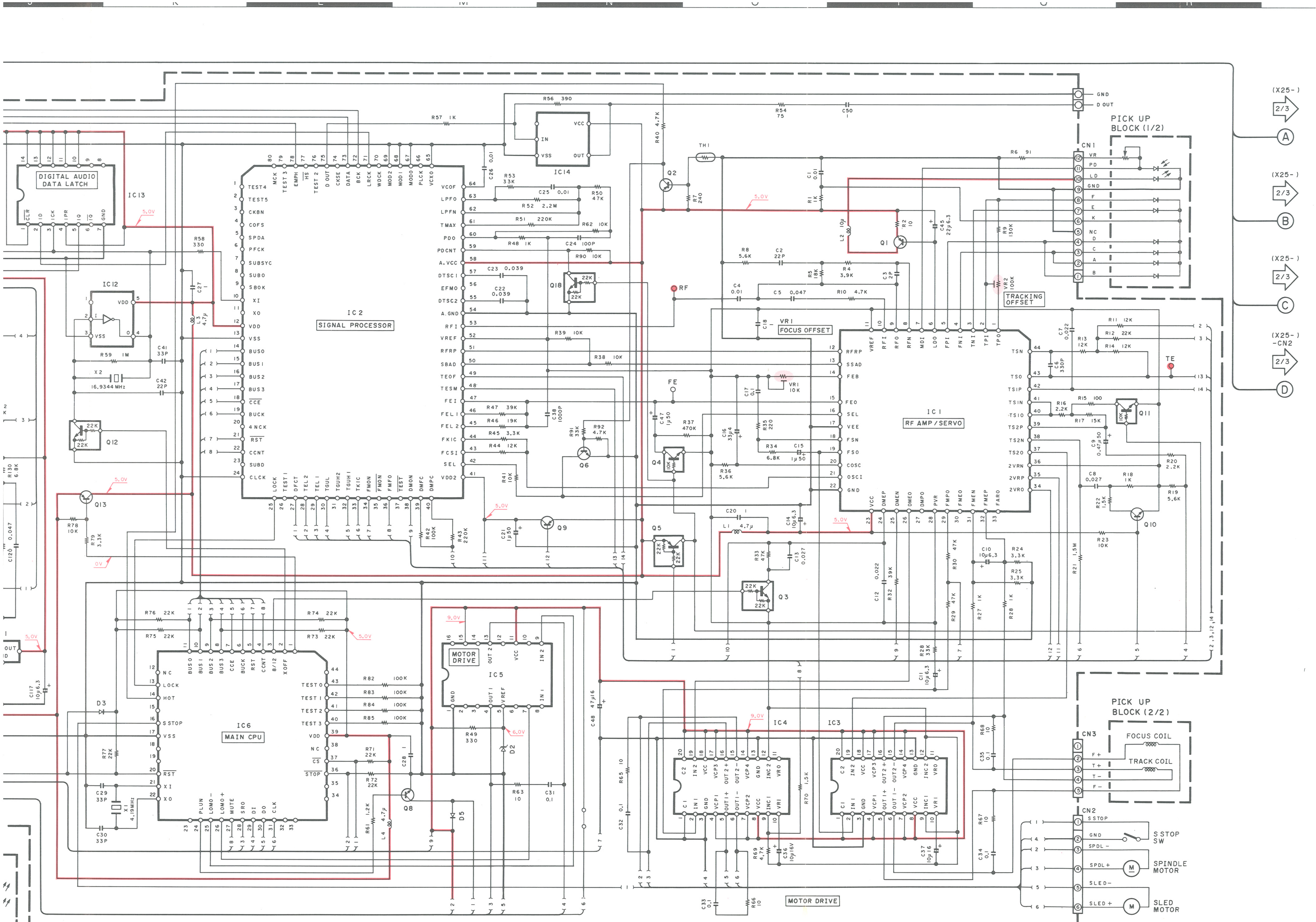
Q1,3,7 : DTC124EK
Q2 : 2SC2413K
Q4 : DTA124EK
Q5,6 : 2SC2412K

D1 : MA110

(X32-1970-01)
IC1 : TA8191F
IC2 : TC9236F
IC3,4 : TA8192F
IC5 : TA7291F
IC6 : μPD75008
IC7 : TC9237F
IC8,9,10 : NJM4580M
IC11 : 78L05F
IC12,14 : TC7SU04F
IC13 : 74HC74F

Q1 : 2SB624
Q2,9 : 2SA1037K
Q3,12,18 : DTC124EK
Q4,11 : DTC114TK
Q5,15. : DTA124EK
Q6,10 : 2SC2412K
Q8,14 : 2SD1624
Q13 : 2SA1036K
Q16,17 : 2SD1757K

D2 : MA8062
D3,5 : MA110
D4 : MA8091


DIGITAL AUDIO DATA LATCH
IC13
IC12
X2 16.9344MHz
Q12
Q13
IC2
SIGNAL PROCESSOR
IC14
Q2
Q18
Q6
Q9
Q4
Q5
Q3
Q1
RF
FE
TE
IC1
RF AMP/SERVO
VR1 FOCUS OFFSET
VR2 TRACKING OFFSET
Q11
Q10
TH1
GND
D OUT
PICK UP BLOCK (1/2)
CN1
(X25-) 2/3 A
(X25-) 2/3 B
(X25-) 2/3 C
(X25-) -CN2 2/3 D
IC6
MAIN CPU
X1 4.19MHz
IC5
MOTOR DRIVE
D2
D3
D5
Q8
IC4
IC3
MOTOR DRIVE
PICK UP BLOCK (2/2)
CN3
FOCUS COIL
TRACK COIL
CN2
S STOP SW
SPINDLE MOTOR
SLED MOTOR
5.0V
9.0V
6.0V
0V

KDC-94R(E)(1/3)

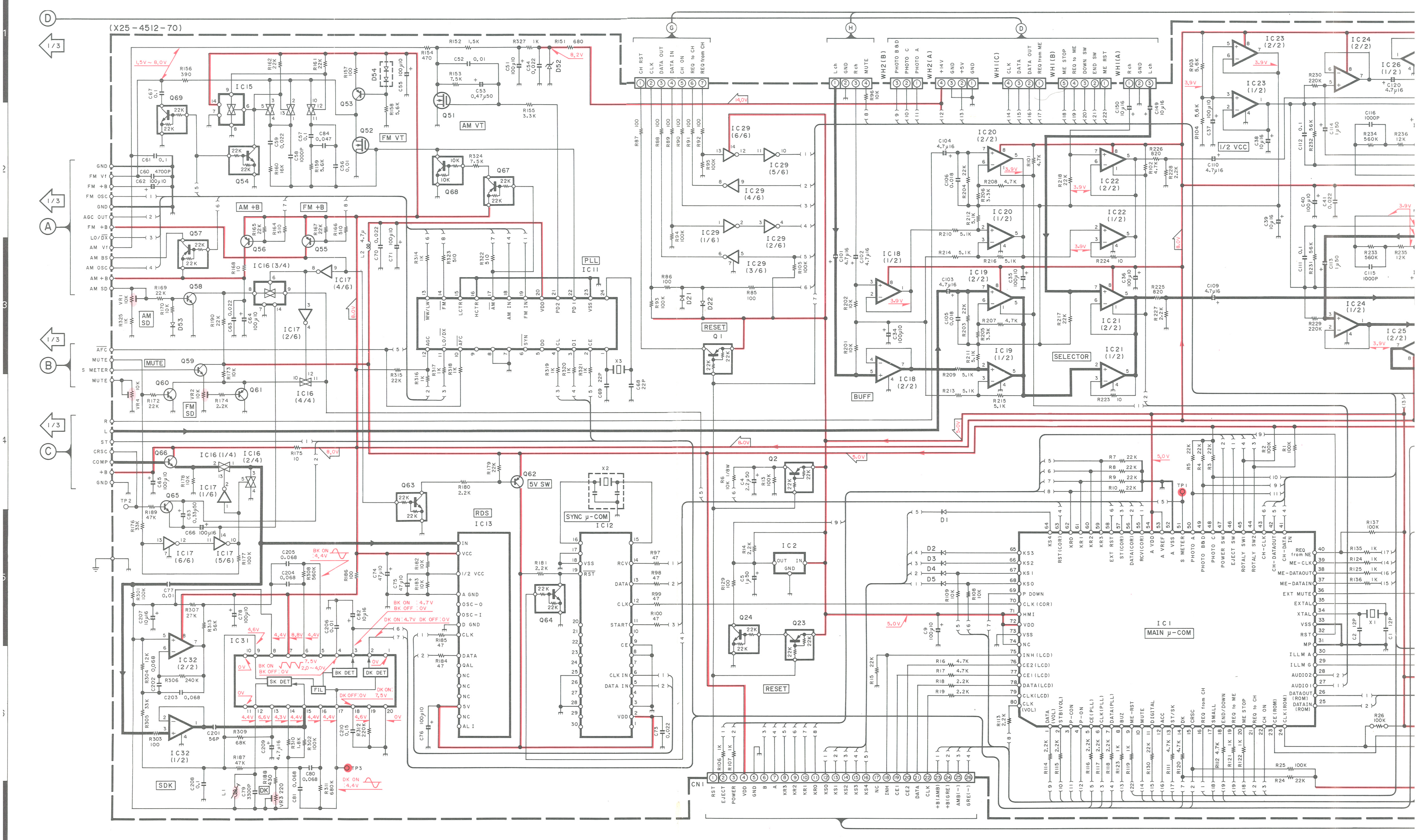
• DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

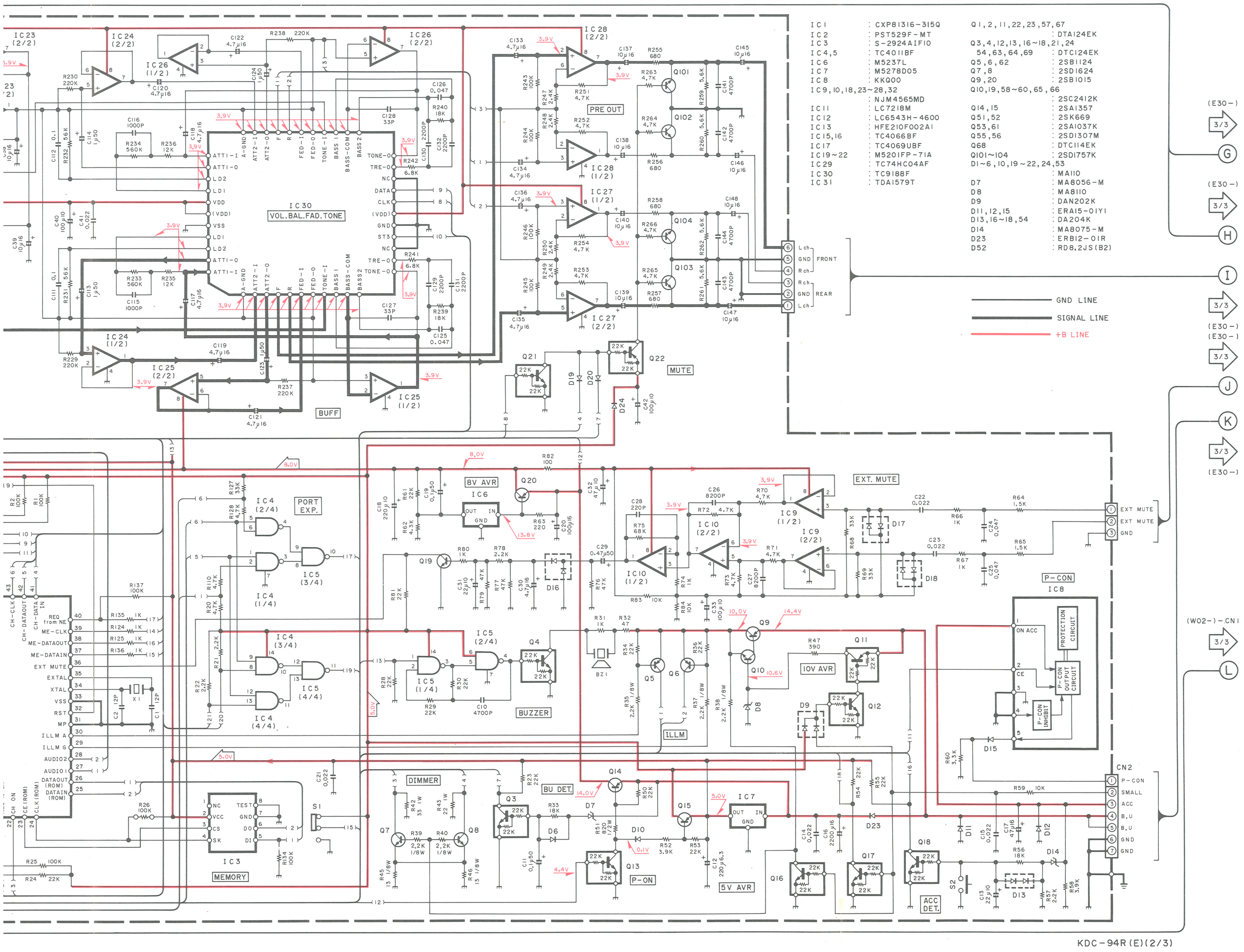
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

Y22-2512-70

KDC-94R

KENWOOD


(X25-4512-70)
D
A
B
C
1/3
G
H
IC15
IC16 (3/4)
IC16 (4/4)
IC16 (1/4)
IC16 (2/4)
IC17 (4/6)
IC17 (2/6)
IC17 (1/6)
IC17 (6/6)
IC17 (5/6)
IC11
PLL
IC13
RDS
IC12
SYNC μ-COM
IC31
IC32 (2/2)
IC32 (1/2)
IC29 (6/6)
IC29 (5/6)
IC29 (4/6)
IC29 (1/6)
IC29 (2/6)
IC29 (3/6)
IC20 (2/2)
IC20 (1/2)
IC19 (2/2)
IC19 (1/2)
IC18 (1/2)
IC18 (2/2)
IC21 (2/2)
IC21 (1/2)
IC22 (2/2)
IC22 (1/2)
IC23 (2/2)
IC23 (1/2)
IC24 (2/2)
IC24 (1/2)
IC25 (2/2)
IC26 (1/2)
IC2
IC1
MAIN μ-COM
AM VT
FM VT
AM +B
FM +B
MUTE
AM SD
FM SD
5V SW
RESET
BUFF
SELECTOR
1/2 VCC
SDK
DK
BK DET
DK DET
SK DET
FIL
GND
FM Vt
FM +B
FM OSC
AGC OUT
LO/DX
AM Vt
AM BS
AM OSC
AM +B
AFC
S METER
R
L
ST
CRSC
COMP
+B
CH RST
CLK
DATA OUT
DATA IN
CH ON
REQ to CH
REQ from CH
WH2(B)
WH2(A)
WH1(C)
WH1(B)
WH1(A)
PHOTO B&D
PHOTO C
PHOTO A
ME STOP
REQ to ME
DOWN SW
END SW
ME RST
REQ from ME
Q1
Q2
Q24
Q23
Q51
Q52
Q53
Q54
Q55
Q56
Q57
Q58
Q59
Q60
Q61
Q62
Q63
Q64
Q65
Q66
Q67
Q68
Q69
D1
D2
D3
D4
D5
D21
D22
D52
D53
D54
X1
X2
X3
TP1
TP2
TP3
CN1
1.5V ~ 8.0V
8.2V
14.0V
8.0V
3.9V
5.0V
BK ON 4.4V
BK ON : 4.7V
BK OFF : 0V
DK ON : 4.7V
DK OFF : 0V
DK ON 4.4V
4.6V
4.4V
8.8V
7.5V
2.0 ~ 4.0V
6.6V
4.3V
RST
EJECT
POWER
VDD
KR3
KR2
KR1
KR0
KS0
KS1
KS2
KS3
KS4
NC
INH
CE1
CE2
DATA
CLK
+B(AMB)
+B(GRE)
AMB(-)
GRE(-)


IC30
VOL.BAL.FAD.TONE
IC24 (2/2)
IC24 (1/2)
IC25 (2/2)
IC25 (1/2)
IC26 (1/2)
IC26 (2/2)
IC27 (1/2)
IC27 (2/2)
IC28 (1/2)
IC28 (2/2)
PRE OUT
BUFF
MUTE
Q101
Q102
Q103
Q104
Q21
Q22
Lch
GND
Rch
FRONT
REAR
(E30-)
3/3
G
H
I
J
K
L
(W02-)-CN1
8V AVR
IC6
Q20
PORT EXP.
IC4 (2/4)
IC4 (1/4)
IC4 (3/4)
IC4 (4/4)
IC5 (3/4)
IC5 (2/4)
IC5 (1/4)
IC5 (4/4)
Q4
BUZZER
BZ1
EXT. MUTE
IC9 (1/2)
IC9 (2/2)
IC10 (1/2)
IC10 (2/2)
D16
D17
D18
Q19
Q5
Q6
Q9
Q10
Q11
Q12
10V AVR
ILLM
P-CON
IC8
ON ACC
CE
PROTECTION CIRCUIT
P-CON OUTPUT CIRCUIT
P-CON INHIBIT
D15
EXT MUTE
GND
CN2
P-CON
SMALL
ACC
B.U
GND
IC3
MEMORY
S1
DIMMER
Q3
Q7
Q8
BU DET
Q14
Q13
Q15
D7
D10
IC7
5V AVR
Q16
Q17
Q18
ACC DET.
D13
D14
D23
S2
CH-CLK
CH-DATAOUT
CH-DATA IN
REQ from NE
ME-CLK
ME-DATAOUT
ME-DATAIN
EXT MUTE
EXTAL
XTAL
VSS
RST
MP
ILLM A
ILLM G
AUDIO2
AUDIO1
DATAOUT (ROM)
DATAIN (ROM)
CE (ROM)
CLK (ROM)
CH ON
X1
3.9V
8.0V
13.8V
14.0V
14.4V
10.0V
10.6V
5.0V
0.1V
4.4V

IC1	: CXP81316-315Q
IC2	: PST529F-MT
IC3	: S-2924AIF10
IC4,5	: TC4011BF
IC6	: M5237L
IC7	: M5278D05
IC8	: KKQ00
IC9,10,18,23~28,32	: NJM4565MD
IC11	: LC7218M
IC12	: LC6543H-4600
IC13	: HFE210F002A1
IC15,16	: TC4066BF
IC17	: TC4069UBF
IC19~22	: M5201FP-71A
IC29	: TC74HC04AF
IC30	: TC9188F
IC31	: TDA1579T

Q1,2,11,22,23,57,67	: DTA124EK
Q3,4,12,13,16~18,21,24 54,63,64,69	: DTC124EK
Q5,6,62	: 2SB1124
Q7,8	: 2SD1624
Q9,20	: 2SB1015
Q10,19,58~60,65,66	: 2SC2412K
Q14,15	: 2SA1357
Q51,52	: 2SK669
Q53,61	: 2SA1037K
Q55,56	: 2SD1307M
Q68	: DTC114EK
Q101~104	: 2SD1757K
D1~6,10,19~22,24,53	: MA110
D7	: MA8056-M
D8	: MA8110
D9	: DAN202K
D11,12,15	: ERA15-01Y1
D13,16~18,54	: DA204K
D14	: MA8075-M
D23	: ERB12-01R
D52	: RD8.2JS(B2)

━ GND LINE

━ SIGNAL LINE

━ +B LINE

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

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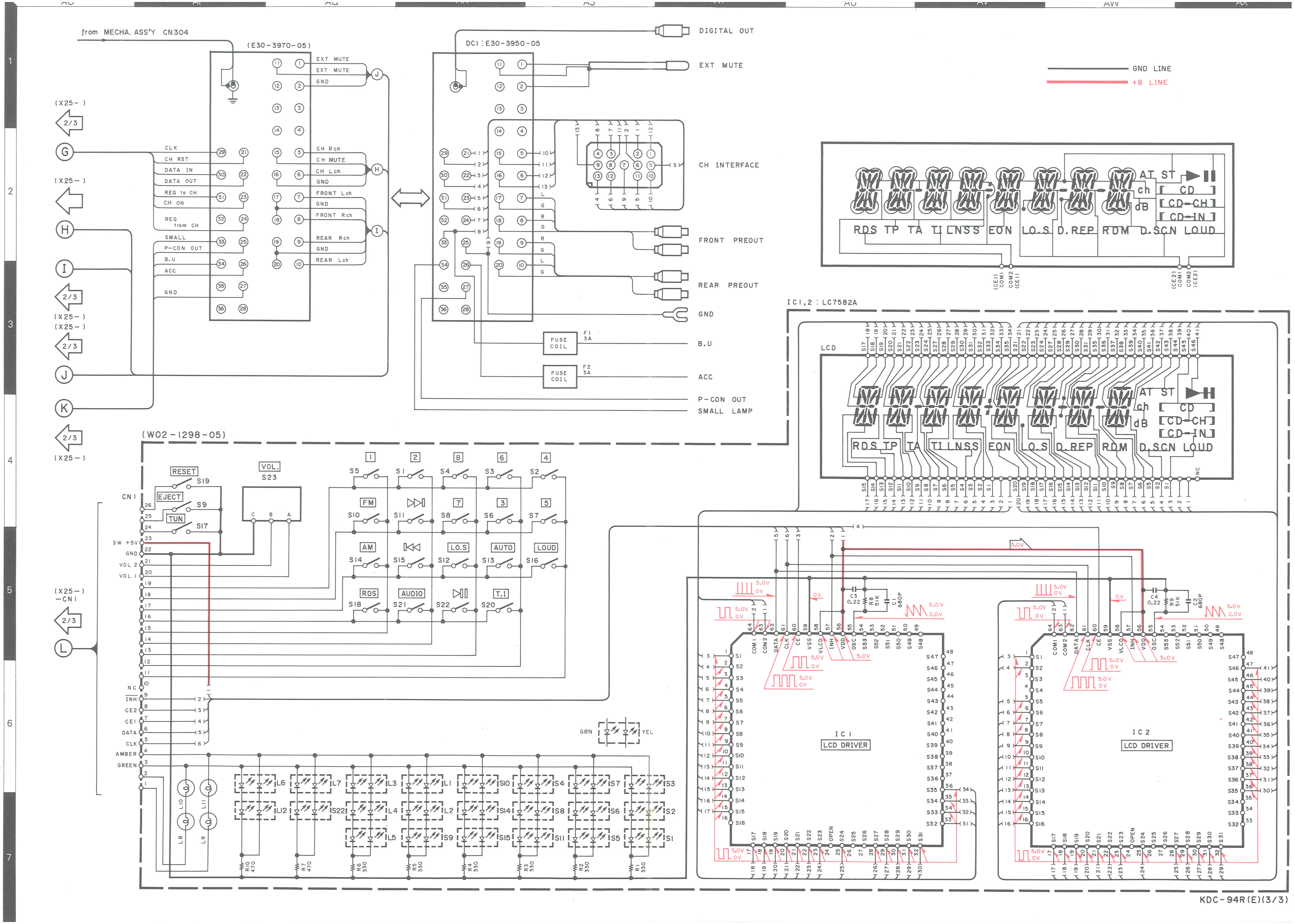
KDC-94R(E)(2/3)

Y22-2512-70

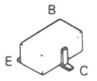
KDC-94R

KENWOOD

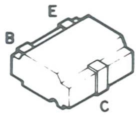

from MECHA. ASS'Y CN304
(E30-3970-05)
DC1 : E30-3950-05
EXT MUTE
EXT MUTE
GND
CLK
CH RST
DATA IN
DATA OUT
REQ to CH
CH ON
REQ from CH
SMALL
P-CON OUT
B.U
ACC
GND
CH Rch
CH MUTE
CH Lch
GND
FRONT Lch
GND
FRONT Rch
REAR Rch
GND
REAR Lch
(X25-) 2/3
G
H
I
J
K
L
(X25-) -CN1
DIGITAL OUT
EXT MUTE
CH INTERFACE
FRONT PREOUT
REAR PREOUT
GND
B.U
ACC
P-CON OUT
SMALL LAMP
FUSE COIL
F1 3A
F2 3A
GND LINE
+B LINE
AT ST
ch
dB
CD
CD-CH
CD-IN
RDS TP TA TI LNSS EON LO.S D.REP RDM D.SCN LOUD
IC1,2 : LC7582A
LCD
(W02-1298-05)
CN1
RESET
EJECT
TUN
VOL.
S23
S19
S9
S17
SW +5V
GND
VOL 2
VOL 1
NC
INH
CE2
CE1
DATA
CLK
AMBER
GREEN
1 2 8 6 4
S5 S1 S4 S3 S2
FM
3 5 7
S10 S11 S8 S6 S7
AM
LO.S
AUTO
LOUD
S14 S15 S12 S13 S16
RDS
AUDIO
T.I
S18 S21 S22 S20
GRN YEL
L10 L11 L8 L9
L6 L7 L3 L1 S10 S4 S7 S3
L12 S22 L4 L2 S14 S8 S6 S2
L5 S9 S15 S11 S5 S1
R10 470
R7 470
R6 330
R5 330
R4 330
R3 330
R2 330
R1 330
IC1 LCD DRIVER
IC2 LCD DRIVER
C3 0.22
R8 51K
C1 680P
C4 0.22
R9 51K
C2 680P
5.0V
0V
2.0V
COM1 COM2 DATA CLK CE VSS VLCD INH VDD OSC
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16
S17 S18 S19 S20 S21 S22 S23 OPEN S24 S25 S26 S27 S28 S29 S30 S31
S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44 S45 S46 S47 S48 S49 S50 S51 S52 S53
(CE1) COM1 COM2 (CE1)
(CE2) COM1 COM2 (CE2)

KDC-94R(E)(3/3)

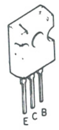
DTA124EK DTC114EK
DTC114TK DTC124 EK
2SA1037K 2SC2412K
2SD1757K



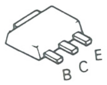
2SA1036K
2SC2413K



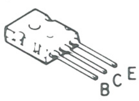
2SA1357



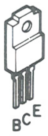
2SD1624
2SB1124



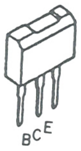
2SC3422Y



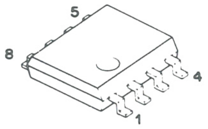
2SB1015



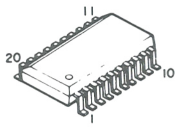
2SB1307M



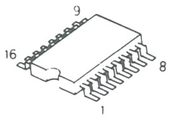
M5237L M5201FP-71A
NJM4580E NJM4565MD
S-2924AIF10



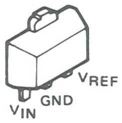
TA8192F



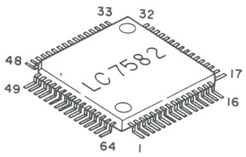
TA7291F



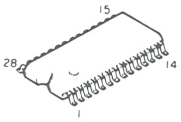
TA78L05F


V_{REF}
GND
V_{IN}

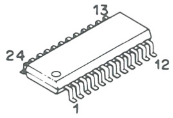
LC7582A


33
32
48
49
LC7582
17
16
64
1

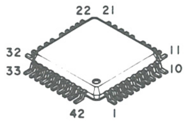
TC9237



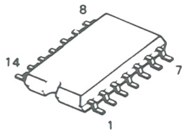
LC7218M



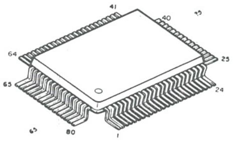
TC9188F


22 21
32
33
11
10
42
1

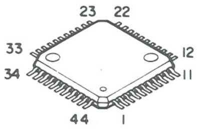
TC4011BF TC4066BF
TC4069UBF TC74HC04AF
TC74HC74AF



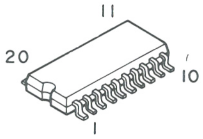
TC9236F
CXP8136-315Q


41
40
25
64
25
65
24
65
80
1

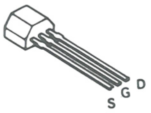
KKC02
TZ8191F


23 22
33
34
12
11
44
1

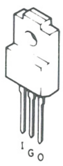
TDA1579T



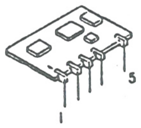
2SK669



M5278D05



KKQ00



- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

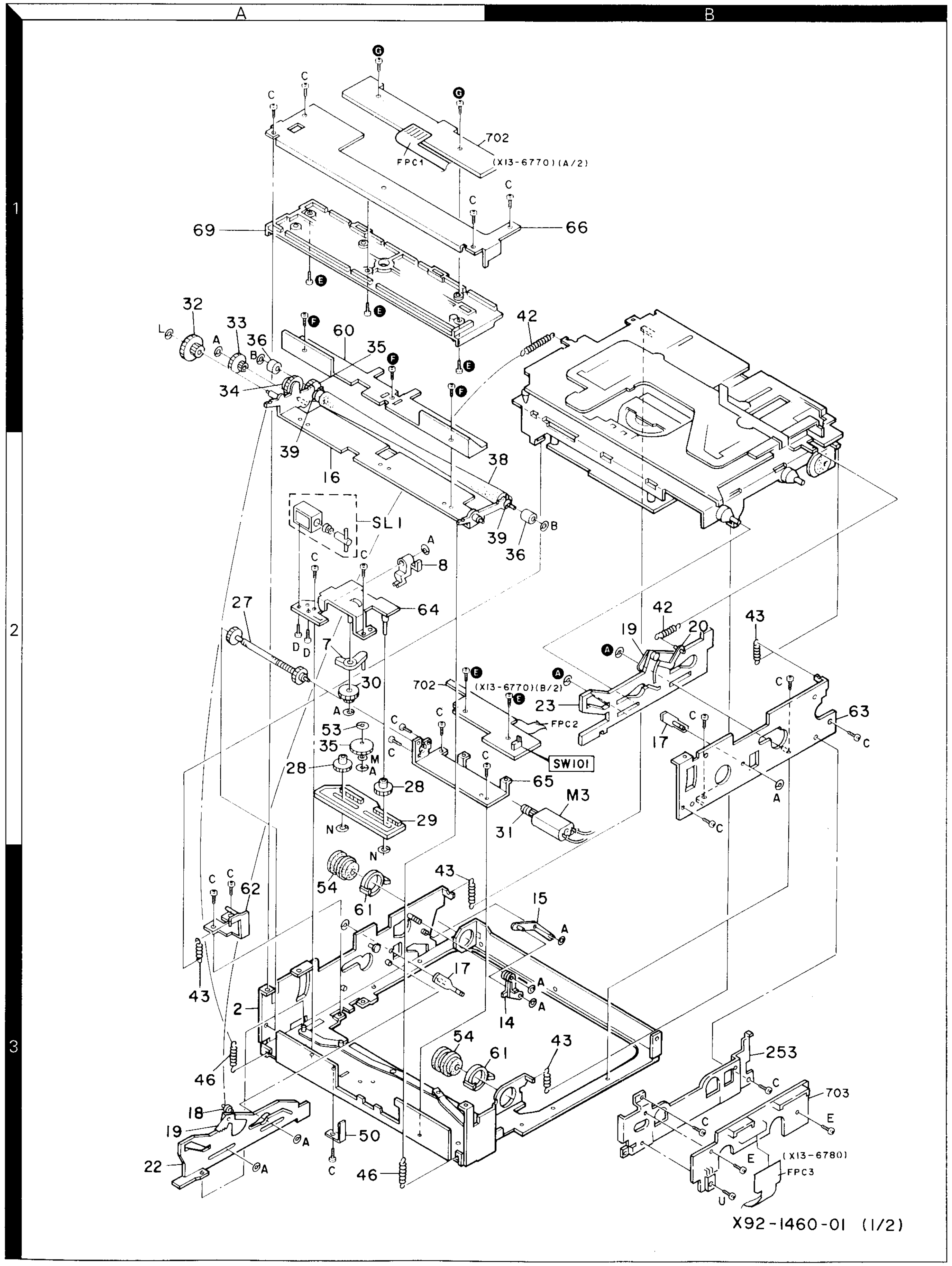
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

Y22-2512-70

KDC-94R

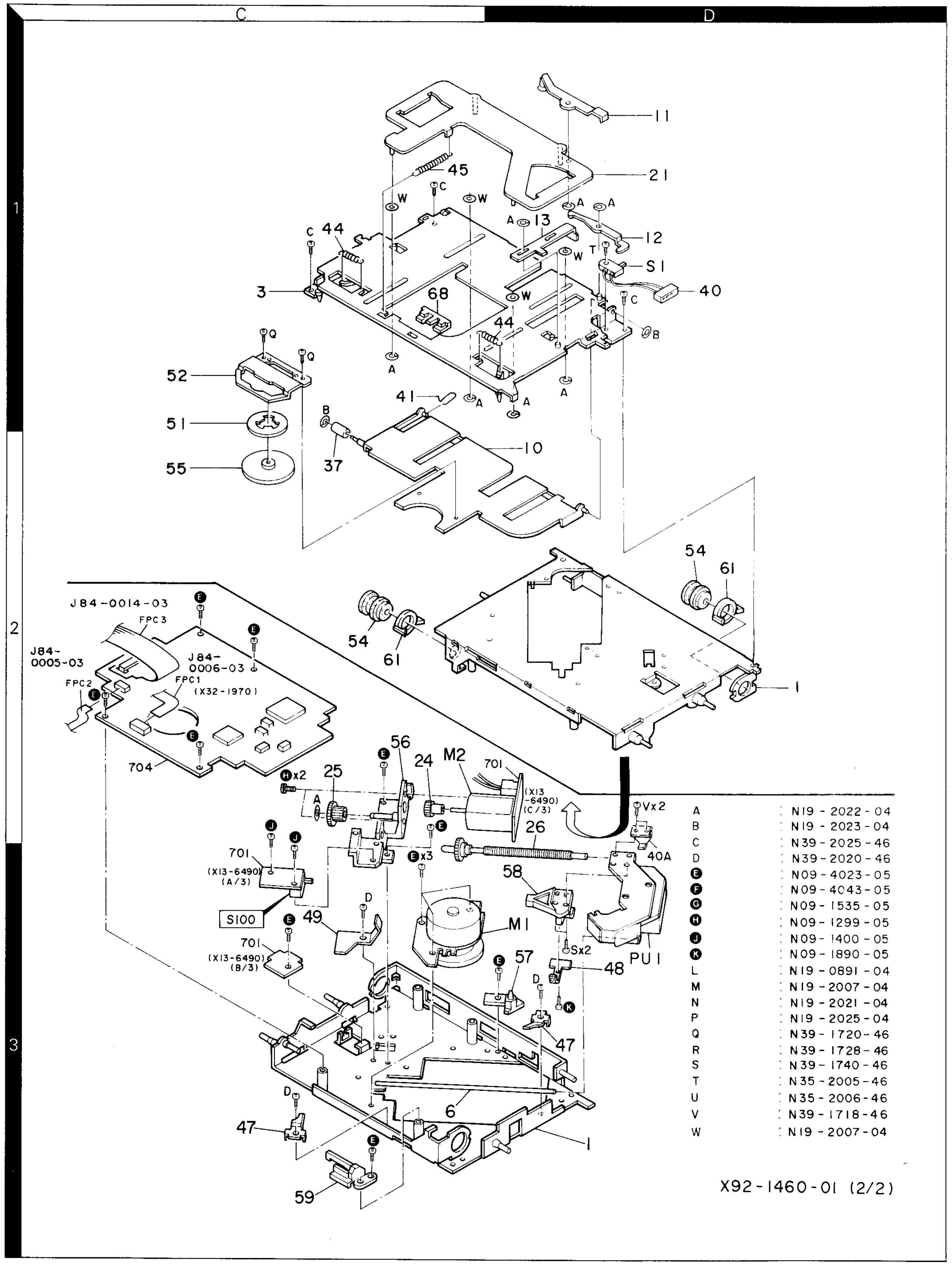
KENWOOD

EXPLODE VIEW (MECHANISM)


A
B
1
2
3
702
FPC1
(X13-6770)(A/2)
66
69
32
33
36
34
60
35
39
16
38
42
SL1
8
64
27
7
30
53
35
28
29
19
20
42
43
702
(X13-6770)(B/2)
23
FPC2
SW101
65
M3
31
17
63
54
61
15
62
43
2
14
17
46
18
19
22
50
46
54
61
43
253
703
(X13-6780)
FPC3
X92-1460-01 (1/2)

Parts with the exploded numbers larger than 700 are not supplied.

EXPLODE VIEW (MECHANISM)

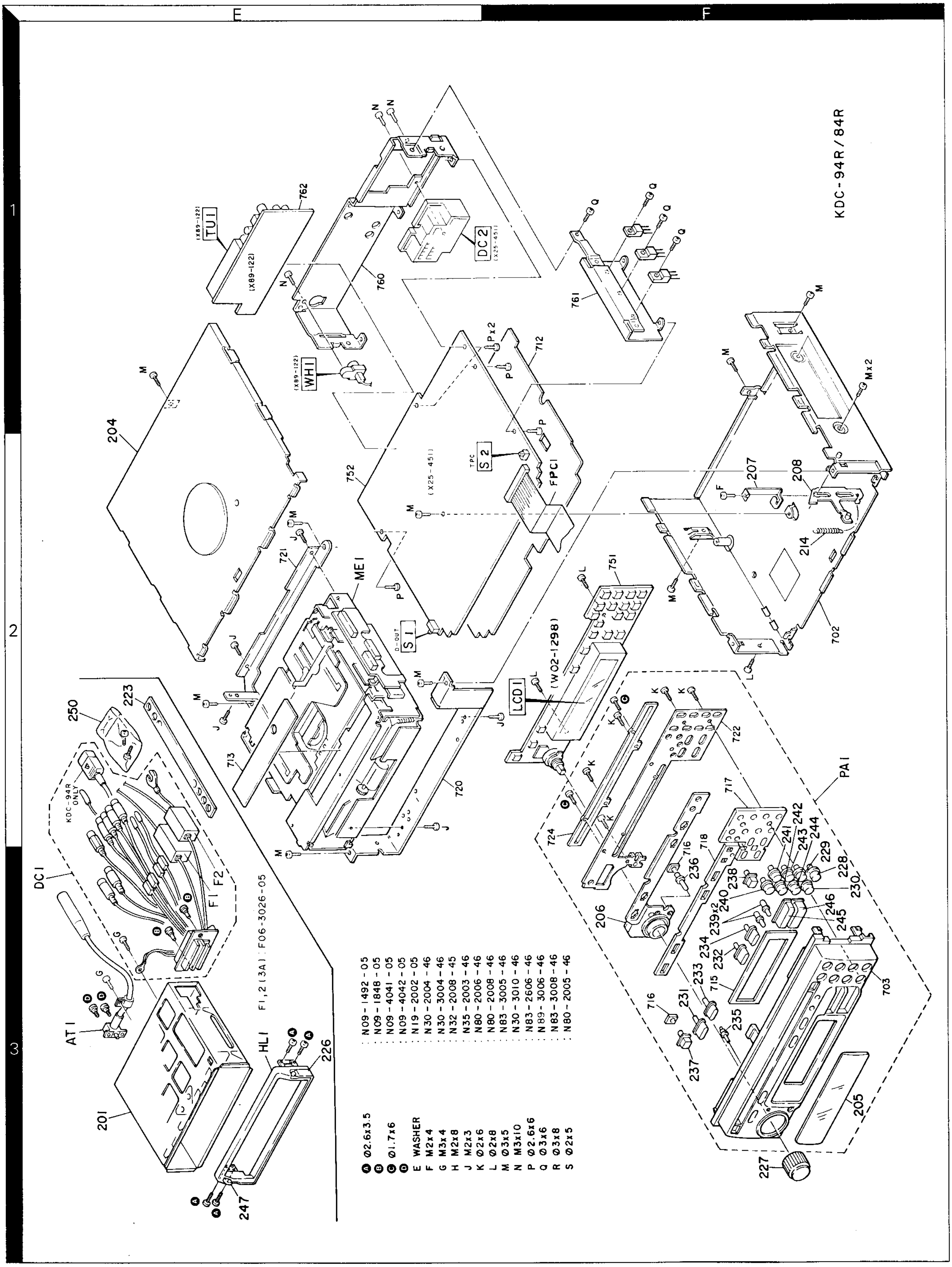

C
D
1
2
3
11
21
45
12
13
S1
40
44
3
68
44
52
51
55
41
37
10
54
61
54
61
1
J84-0014-03
FPC3
J84-0005-03
FPC2
J84-0006-03
FPC1
(X32-1970)
704
56
24
M2
701
(X13-6490)(C/3)
25
26
Vx2
40A
701
(X13-6490)(A/3)
58
S100
49
M1
701
(X13-6490)(B/3)
57
Sx2
48
PU1
47
6
1
47
59
X92-1460-01 (2/2)

A	: N19 - 2022 - 04
B	: N19 - 2023 - 04
C	: N39 - 2025 - 46
D	: N39 - 2020 - 46
Ⓔ	: N09 - 4023 - 05
Ⓕ	: N09 - 4043 - 05
Ⓖ	: N09 - 1535 - 05
Ⓗ	: N09 - 1299 - 05
Ⓙ	: N09 - 1400 - 05
Ⓚ	: N09 - 1890 - 05
L	: N19 - 0891 - 04
M	: N19 - 2007 - 04
N	: N19 - 2021 - 04
P	: N19 - 2025 - 04
Q	: N39 - 1720 - 46
R	: N39 - 1728 - 46
S	: N39 - 1740 - 46
T	: N35 - 2005 - 46
U	: N35 - 2006 - 46
V	: N39 - 1718 - 46
W	: N19 - 2007 - 04

Parts with the exploded numbers larger than 700 are not supplied.

KDC-94R

EXPLODE VIEW (UNIT)


E
F
1
2
3
KDC-94R/84R
N
762
TU1
(X89-122)
760
DC2
(X25-451)
Q
761
M
Mx2
Px2
P
712
WH1
204
752
TPC
S2
FPC1
207
208
F
214
702
L
751
LCD1
(W02-1298)
D-OUT
S1
ME1
721
J
713
720
K
722
717
724
716
718
236
206
238
241
242
243
244
229
228
230
240
239x2
246
245
234
232
233
715
231
235
237
703
205
227
PA1
250
223
KDC-94R ONLY
DC1
F1
F2
G
AT1
201
HL1
226
247

F1,2 (3A) : F06-3026-05

Ⓐ	Ø2.6x3.5	N09-1492-05
Ⓑ		N09-1848-05
Ⓒ	Ø1.7x6	N09-4041-05
Ⓓ		N09-4042-05
E	WASHER	N19-2002-05
F	M2x4	N30-2004-46
G	M3x4	N30-3004-46
H	M2x8	N32-2008-45
J	M2x3	N35-2003-46
K	Ø2x6	N80-2006-46
L	Ø2x8	N80-2008-46
M	Ø3x5	N83-3005-46
N	M3x10	N30-3010-46
P	Ø2.6x6	N83-2606-46
Q	Ø3x6	N89-3006-46
R	Ø3x8	N83-3008-46
S	Ø2x5	N80-2005-46

Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

⁎ New Parts
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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部 品 番 号	Description 部 品 名／規 格	Desti-nation 仕 向	Re-marks 備考
KDC-94R						
201	3E	*	A01-2538-01	METALLIC CABINET		
204	2E	*	A52-0629-12	TOP PLATE		
PA1	3F	*	A20-7646-22	PANEL ASSY		
205	3F	*	B10-1402-03	FRONT GLASS		
206	3F		B19-0860-02	LIGHTING BOARD		
HL1	3E	*	B07-2025-12	ESCUTCHEON ASSY		
LCD1	2F	*	B38-0539-05	LIQUID CRYSTAL		
-		*	B11-0822-04	OPTICAL DIFFUSER (LCD)		
-		*	B19-0862-03	LIGHTING BOARD (LCD)		
-		*	B40-7204-04	MODEL NAME-PLATE	E	
-		*	B40-7205-04	MODEL NAME-PLATE	T	
-			B42-0736-24	STICKER	T	
-			B44-6005-04	POS LABEL	E	
-			B44-6006-04	POS LABEL		
-			B44-6007-04	POS LABEL		
-			B46-0100-20	WARRANTY CARD		
-			B46-0182-04	ID CARD	E	
-		*	B64-0093-00	INSTRUCTION MANUAL (E,F)		
-		*	B64-0094-00	INSTRUCTION MANUAL (D,N,I)		
207	2F		D10-2550-04	LEVER		
208	2F	*	D10-2684-14	LEVER		
-		*	E29-1340-04	CONDUCTIVE RUBBER (LCD)		
AT1	3E	*	E30-3671-05	CORD WITH CONNECTOR		
DC1	3E		E30-3950-05	CONNECTOR ASSY		
214	2F		G01-2040-04	EXTENSION SPRING		
-		*	H01-9253-04	ITEM CARTON CASE		
-		*	H03-3292-04	OUTER CARTON CASE		
-			H10-4372-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0329-04	PROTECTION BAG (280X450X0.03)		
-			H25-0336-04	PROTECTION BAG (170X250X0.03)		
223	2E		J54-0059-04	STAY		
-		*	J19-4397-03	HOLDER (LCD)		
FPC1	2F	*	J84-0019-02	FLEXIBLE PRINTED WIRING BOARD		
226	3E		K01-0601-03	HANDLE		
227	3F		K23-1009-03	KNOB (VOL.)		
228	3F		K24-0616-13	KNOB (8)		
229	3F		K24-0625-13	KNOB (6)		
230	3F		K24-0626-13	KNOB (7)		
231	3F		K24-0782-03	KNOB (AUDIO)		
232	3F		K24-0784-03	KNOB (TUN)		
233	3F	*	K24-0789-03	KNOB (RDS)		
234	3F	*	K24-0788-03	KNOB (CD-CH)		
235	3F		K24-0791-04	KNOB (RESET)		
236	3F		K24-0792-04	KNOB (T.1)		
237	3F		K24-0793-04	KNOB (PLAY/PAUSE)		
238	3F		K24-0794-04	KNOB (EJECT)		
239	3F		K24-0795-04	KNOB (AUTO)		
240	3F		K24-0812-03	KNOB (1)		
241	3F		K24-0813-03	KNOB (2)		
242	3F		K24-0814-03	KNOB (3)		

KDC-94R

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
243	3F		K24-0815-03	KNOB (4)		
244	3F		K24-0829-03	KNOB (5)		
245	3F		K25-0567-03	KNOB (AM,FM)		
246	3F		K25-0571-03	KNOB (TUNE)		
247	3E		K27-3510-04	KNOB (LEVER)		
250	2E		N99-0280-05	SCREW SET		
A	3E		N09-1492-05	MACHINE SCREW (2.6X3.5,PAN)		
C	2F		N09-4041-05	SEMS (TAPTITE SCREW)(1.7X6,PAN		
D	3E		N09-4042-05	STEPPED SCREW		
F	2F		N30-2004-46	PAN HEAD MACHIN SCREW		
G			N30-3004-46	PAN HEAD MACHIN SCREW		
H			N32-2008-45	FLAT HEAD MACHIN SCREW		
J	2E		N35-2003-46	BINDING HEAD MACHIN SCREW		
K	2F		N80-2006-46	PAN HEAD TAPTITE SCREW		
L	2F		N80-2008-46	PAN HEAD TAPTITE SCREW		
M	2E		N83-3005-46	PAN HEAD TAPTITE SCREW		
Q	1F		N83-3006-46	PAN HEAD TAPTITE SCREW		
ME1	2E	*	X92-1460-01	MECHANISM ASSY		

SUB-CIRCUIT UNIT (X13-6490-00)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
S100		*	S50-1038-05	MICRO SWITCH		

SUB-CIRCUIT UNIT (X13-6770-00)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
D100-103			B30-1326-05	LED		
S101			S40-1140-05	PUSH SWITCH		
PH100-103			TPS-605(LB)	PHOTO TRANSISTOR		

SUB-CIRCUIT UNIT (X13-6780-00)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C301			CE04CW1C4R7M	ELECTRO 4.7UF 16WV		
C302			C91-0692-05	CERAMIC 0.047UF K		
-			N09-4023-05	MACHINE SCREW (M2X3)		
-			N35-2006-46	BINDING HEAD MACHIN SCREW		
D301			RD11JS(B2)	ZENER DIODE		
Q301			2SC3422Y	TRANSISTOR		

ELECTRIC UNIT (X25-4512-70)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C1 ,2			CC73FCH1H120J	CHIP C 12PF J		
C3			CK73FB1H223KTA	CHIP C 0.022UF K		
C4			CE04CW1H2R2M	ELECTRO 2.2UF 50WV		
C5			CE04CW1H010M	ELECTRO 1.0UF 50WV		
C6 ,7			CK73FB1H223KTA	CHIP C 0.022UF K		
C9			CE04CW1A101M	ELECTRO 100UF 10WV		
C10			CK73FB1H472K	CHIP C 4700PF K		
C11			CE04CW1H0R1M	ELECTRO 0.1UF 50WV		
C12			CE04DW0J221M	ELECTRO 220UF 6.3WV		
C13			CE04CW1A220M	ELECTRO 22UF 10WV		
C14			CK73EB1H223K	CHIP C 0.022UF K		
C15			CK73FB1H223KTA	CHIP C 0.022UF K		
C16			C90-2537-05	ELECTRO 2200UF 16WV		
C17			CE04DW1C470M	ELECTRO 47UF 16WV		
C18			CE04DW1A221M	ELECTRO 220UF 10WV		
C19			CE04DW1H0R1M	ELECTRO 0.1UF 50WV		
C20			CE04DW1C101M	ELECTRO 100UF 16WV		
C21 -23			CK73FB1H223KTA	CHIP C 0.022UF K		

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C24 ,25			CK73FB1E473KTA	CHIP C 0.047UF K		
C26 ,27			CK73FB1H822K	CHIP C 8200PF K		
C28			CK73FB1H221K	CHIP C 220PF K		
C29			CE04CW1HR47M	ELECTRO 0.47UF 50WV		
C30			CE04CW1C4R7M	ELECTRO 4.7UF 16WV		
C31			CE04CW1A220M	ELECTRO 22UF 10WV		
C32			CE04CW1A470M	ELECTRO 47UF 10WV		
C33 -37			CE04CW1A101M	ELECTRO 100UF 10WV		
C38 ,39			CE04CW1C100M	ELECTRO 10UF 16WV		
C40			CE04CW1A101M	ELECTRO 100UF 10WV		
C41			CK73FB1H223KTA	CHIP C 0.022UF K		
C42			CE04CW1A101M	ELECTRO 100UF 10WV		
C51			CE04CW1A101M	ELECTRO 100UF 10WV		
C52		*	C93-1031-05	CERAMIC 0.01UF K		
C53			CE04CW1HR47M	ELECTRO 0.47UF 50WV		
C54			CK73FB1H223KTA	CHIP C 0.022UF K		
C55			CE04CW1A101M	ELECTRO 100UF 10WV		
C56		*	C93-1031-05	CERAMIC 0.01UF K		
C58			CK73FB1H102K	CHIP C 1000PF K		
C59			CK73FB1H223KTA	CHIP C 0.022UF K		
C60		*	C93-1036-05	CERAMIC 4700PF K		
C62			CE04CW1A101M	ELECTRO 100UF 10WV		
C63			CK73FB1H223KTA	CHIP C 0.022UF K		
C64 -66			CE04CW1A101M	ELECTRO 100UF 10WV		
C68 ,69			CC73FCH1H220J	CHIP C 22PF J		
C70			CK73FB1H223KTA	CHIP C 0.022UF K		
C71			CE04CW1A101M	ELECTRO 100UF 10WV		
C73			CK73FB1H223KTA	CHIP C 0.022UF K		
C74 ,75			CE04CW1A470M	ELECTRO 47UF 10WV		
C76			CE04CW1A101M	ELECTRO 100UF 10WV		
C77			CK73FB1H103K	CHIP C 0.010UF K		
C78			CE04CW1A101M	ELECTRO 100UF 10WV		
C79			CQ93AP2A332J	POLYPRO 3300PF J		
C80			CF92V1H683J	MF 0.068UF J		
C81			CF92FV1H683J	MF 0.068UF J		
C82			CE04CW1C100M	ELECTRO 10UF 16WV		
C83			CE04CW1HR33M	ELECTRO 0.33UF 50WV		
C84		*	C93-1034-05	CERAMIC 0.47UF K		
C101-104			CE04CW1C4R7M	ELECTRO 4.7UF 16WV		
C105,106			CK73FB1H183KTA	CHIP C 0.018UF K		
C109,110			CE04CW1C4R7M	ELECTRO 4.7UF 16WV		
C111,112			CK73EB1E104K	CHIP C 0.10UF K		
C113,114			CE04CW1H010M	ELECTRO 1.0UF 50WV		
C115,116			CK73FB1H102K	CHIP C 1000PF K		
C117-122			CE04CW1C4R7M	ELECTRO 4.7UF 16WV		
C123,124			CE04CW1H010M	ELECTRO 1.0UF 50WV		
C125,126			CK73EB1H473K	CHIP C 0.047UF K		
C127,128			CC73FSL1H330J	CHIP C 33PF J		
C129-132			CK73FB1H222K	CHIP C 2200PF K		
C133-136			CE04CW1C4R7M	ELECTRO 4.7UF 16WV		
C137			CE04CW1C100M	ELECTRO 10UF 16WV		
C138			CE04CW1C100M	ELECTRO 10UF 16WV		
C139			CE04CW1C100M	ELECTRO 10UF 16WV		
C140			CE04CW1C100M	ELECTRO 10UF 16WV		
C141-144		*	C93-1036-05	CERAMIC 4700PF K		

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C145,146			CE04CW1C100M	ELECTRO 10UF 16WV		
C147-150			CE04CW1C100M	ELECTRO 10UF 16WV		
C201			CC73FCH1H560J	CHIP C 56PF J		
C202-205			C93-0026-05	CHIP C 0.068UF 50WV		
C206			CK73FB1H103K	CHIP C 0.010UF K		
C207			CE04CW1C100M	ELECTRO 10UF 16WV		
C208			CK73EB1E104K	CHIP C 0.10UF K		
C209			CE04CW1C4R7M	ELECTRO 4.7UF 16WV		
C210			CK73DB1H154K	CHIP C 0.15UF K		
LH1 -5			J19-2826-05	HOLDER		
L1			L39-0156-05	TRAP COIL		
L2		*	L40-4791-31	SMALL FIXED INDUCTOR(4.7UH)		
X1			L77-2003-05	CRYSTAL RESONATOR(8.388608MHZ)		
X2			L78-0503-05	RESONATOR (4.00MHZ)		
X3			L77-1166-05	CRYSTAL RESONATOR		
-			N83-2606-41	PAN HEAD TAPTITE SCREW		
-			N89-3008-46	BINDING HEAD TAPTITE SCREW		
N	1E		N30-3010-46	PAN HEAD MACHIN SCREW		
P	2E		N83-2606-46	PAN HEAD TAPTITE SCREW		
Q	1F		N89-3006-46	BINDING HEAD TAPTITE SCREW		
R1 ,2			RK73FB2A104J	CHIP R 100K J 1/10W		
R3 -5			RK73FB2A223J	CHIP R 22K J 1/10W		
R6			RK73EB2B103J	CHIP R 10K J 1/8W		
R7 -12			RK73FB2A223J	CHIP R 22K J 1/10W		
R13			RK73FB2A104J	CHIP R 100K J 1/10W		
R14			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R15			RK73FB2A223J	CHIP R 22K J 1/10W		
R16 ,17			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R18 ,19			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R20			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R21 ,22			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R23 ,24			RK73FB2A223J	CHIP R 22K J 1/10W		
R25 ,26			RK73FB2A104J	CHIP R 100K J 1/10W		
R28 -30			RK73FB2A223J	CHIP R 22K J 1/10W		
R31			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R32			RK73FB2A470J	CHIP R 47 J 1/10W		
R33			RK73FB2A183J	CHIP R 18K J 1/10W		
R34			RK73FB2A223J	CHIP R 22K J 1/10W		
R35			RK73EB2B222J	CHIP R 2.2K J 1/8W		
R36			RK73FB2A223J	CHIP R 22K J 1/10W		
R37 -40			RK73EB2B222J	CHIP R 2.2K J 1/8W		
R42			R92-2015-05	CHIP R 33 J 1W		
R43			R92-2014-05	CHIP R 22 J 1W		
R45 ,46		*	RK73EB2B130J	CHIP R 13 J 1/8W		
R47			RK73FB2A391J	CHIP R 390 J 1/10W		
R50			RK73FB2A223J	CHIP R 22K J 1/10W		
R51			RD14DB2H821J	SMALL-RD 820 J 1/2W		
R52			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R53 -55			RK73FB2A223J	CHIP R 22K J 1/10W		
R56			RK73FB2A183J	CHIP R 18K J 1/10W		
R57			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R58			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R59			RK73FB2A103J	CHIP R 10K J 1/10W		
R60			RK73EB2B332J	CHIP R 3.3K J 1/8W		

PARTS LIST

⋇ New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
R61			RK73FB2A223J	CHIP R 22K J 1/10W		
R62			RK73FB2A432J	CHIP R 4.3K J 1/10W		
R63			RK73FB2A221J	CHIP R 220 J 1/10W		
R64 ,65			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R66 ,67			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R68 ,69			RK73FB2A333J	CHIP R 33K J 1/10W		
R70 -73			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R74			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R75			RK73FB2A683J	CHIP R 68K J 1/10W		
R76 ,77			RK73FB2A473J	CHIP R 47K J 1/10W		
R78			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R79			RK73FB2A473J	CHIP R 47K J 1/10W		
R80			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R81			RK73FB2A223J	CHIP R 22K J 1/10W		
R82			RK73FB2A101J	CHIP R 100 J 1/10W		
R83 ,84			RK73FB2A103J	CHIP R 10K J 1/10W		
R85 -92			RK73FB2A101J	CHIP R 100 J 1/10W		
R93 -95			RK73FB2A104J	CHIP R 100K J 1/10W		
R96			RK73FB2A103J	CHIP R 10K J 1/10W		
R97 -100			RK73FB2A470J	CHIP R 47 J 1/10W		
R101,102			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R103,104			RK73EB2B562J	CHIP R 5.6K J 1/8W		
R105			RK73FB2A104J	CHIP R 100K J 1/10W		
R106,107			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R108,109			RK73FB2A103J	CHIP R 10K J 1/10W		
R110-112			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R113-118			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R119			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R120			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R121-125			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R127			RK73FB2A333J	CHIP R 33K J 1/10W		
R128			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R129			RK73FB2A101J	CHIP R 100 J 1/10W		
R130			RK73FB2A223J	CHIP R 22K J 1/10W		
R134			RK73FB2A104J	CHIP R 100K J 1/10W		
R135,136			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R137			RK73FB2A104J	CHIP R 100K J 1/10W		
R151			RK73FB2A681J	CHIP R 680 J 1/10W		
R152			RK73EB2B152J	CHIP R 1.5K J 1/8W		
R153			RK73FB2A752J	CHIP R 7.5K J 1/10W		
R154			RK73FB2A471J	CHIP R 470 J 1/10W		
R155			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R156			RK73FB2A391J	CHIP R 390 J 1/10W		
R157			RK73FB2A101J	CHIP R 100 J 1/10W		
R158,159			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R160			RK73FB2A163J	CHIP R 16K J 1/10W		
R161,162			RK73FB2A223J	CHIP R 22K J 1/10W		
R163			RK73FB2A471J	CHIP R 470 J 1/10W		
R164			RK73EB2B511J	CHIP R 510 J 1/8W		
R165			RK73FB2A223J	CHIP R 22K J 1/10W		
R166			RK73EB2B511J	CHIP R 510 J 1/8W		
R167			RK73FB2A223J	CHIP R 22K J 1/10W		
R168			RK73FB2A100J	CHIP R 10 J 1/10W		
R169			RK73FB2A223J	CHIP R 22K J 1/10W		
R170			RK73FB2A103J	CHIP R 10K J 1/10W		

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
R171,172			RK73FB2A223J	CHIP R 22K J 1/10W		
R173			RK73FB2A103J	CHIP R 10K J 1/10W		
R174			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R175			RK73FB2A100J	CHIP R 10 J 1/10W		
R176			RK73FB2A333J	CHIP R 33K J 1/10W		
R177			RK73FB2A104J	CHIP R 100K J 1/10W		
R178			RK73FB2A103J	CHIP R 10K J 1/10W		
R179			RK73FB2A223J	CHIP R 22K J 1/10W		
R180,181			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R182,183			RK73FB2A103J	CHIP R 10K J 1/10W		
R184,185			RK73FB2A470J	CHIP R 47 J 1/10W		
R186			RK73FB2A101J	CHIP R 100 J 1/10W		
R187			RK73FB2A473J	CHIP R 47K J 1/10W		
R188			RK73FB2A431J	CHIP R 430 J 1/10W		
R189			RK73FB2A473J	CHIP R 47K J 1/10W		
R190			RK73FB2A223J	CHIP R 22K J 1/10W		
R201,202			RK73FB2A103J	CHIP R 10K J 1/10W		
R203,204			RK73FB2A223J	CHIP R 22K J 1/10W		
R205,206			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R207,208			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R209-216			RK73FB2A512J	CHIP R 5.1K J 1/10W		
R217,218			RK73FB2A223J	CHIP R 22K J 1/10W		
R223,224			RK73FB2A100J	CHIP R 10 J 1/10W		
R225,226			RK73FB2A821J	CHIP R 820 J 1/10W		
R227,228			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R229,230			RK73FB2A224J	CHIP R 220K J 1/10W		
R231,232			RK73FB2A563J	CHIP R 56K J 1/10W		
R233,234			RK73FB2A564J	CHIP R 560K J 1/10W		
R235,236			RK73FB2A123J	CHIP R 12K J 1/10W		
R237,238			RK73FB2A224J	CHIP R 220K J 1/10W		
R239,240			RK73FB2A183J	CHIP R 18K J 1/10W		
R241,242			RK73FB2A682J	CHIP R 6.8K J 1/10W		
R243-246			RK73FB2A104J	CHIP R 100K J 1/10W		
R247-250			RK73FB2A242J	CHIP R 2.4K J 1/10W		
R251-254			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R255-258			RK73FB2A681J	CHIP R 680 J 1/10W		
R259-262			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R263-266			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R301,302			RK73FB2A104J	CHIP R 100K J 1/10W		
R303			RK73FB2A101J	CHIP R 100 J 1/10W		
R304			RK73FB2A123J	CHIP R 12K J 1/10W		
R305			RK73FB2A333J	CHIP R 33K J 1/10W		
R306			RK73FB2A244J	CHIP R 240K J 1/10W		
R307			RK73FB2A273J	CHIP R 27K J 1/10W		
R308			RK73FB2A564J	CHIP R 560K J 1/10W		
R309			RK73FB2A683J	CHIP R 68K J 1/10W		
R310			RK73FB2A182J	CHIP R 1.8K J 1/10W		
R311			RK73FB2A684J	CHIP R 680K J 1/10W		
R312			RK73FB2A224J	CHIP R 220K J 1/10W		
R313			RK73FB2A563J	CHIP R 56K J 1/10W		
R314			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R315			RK73FB2A223J	CHIP R 22K J 1/10W		
R316-321			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R322,323			RK73EB2B511J	CHIP R 510 J 1/8W		
R324			RK73FB2A752J	CHIP R 7.5K J 1/10W		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
R325			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R326			RK73FB2A100J	CHIP R 10 J 1/10W		
R327			RK73FB2A102J	CHIP R 1.0K J 1/10W		
VR1 ,2			R12-6423-05	TRIM POT. 10K		
VR3			R12-6413-05	TRIMMING POT.		
VR4			R12-6423-05	TRIM POT. 10K		
W1 -4			R92-2053-05	JUMPER WIRE (RESISTOR TYPE)		
S1		*	S62-0803-05	SLIDE SWITCH		
S2			S40-1140-05	PUSH SWITCH		
BZ1		*	T95-0207-05	PIEZOELECTRIC VIBRATOR		
D1 -6			MA110	DIODE		
D7			MA8056-M	ZENER DIODE		
D8			MA8110	ZENER DIODE		
D9			DAN202K	DIODE		
D10			MA110	DIODE		
D11 ,12			ERA15-01Y1	DIODE		
D13			DA204K	DIODE		
D14			MA8075-M	ZENER DIODE		
D15			ERA15-01Y1	DIODE		
D16 -18			DA204K	DIODE		
D19 -22			MA110	DIODE		
D23			ERB12-01R	DIODE		
D24			MA110	DIODE		
D52			RD8.2JS(B2)	ZENER DIODE		
D53			MA110	DIODE		
D54			DA204K	DIODE		
IC1		*	CXP81316-315Q	IC		
IC2			PST529F-MT	IC		
IC3		*	S-2924AIF10	IC		
IC4 ,5		*	TC4011BF	IC(NAND X4)		
IC6			M5237L	IC		
IC7			M5278D05	IC		
IC8			KKQ00	IC(POWER CONTROL)		
IC9 ,10			NJM4565MD	IC(OP AMP X2)		
IC11			LC7218M	IC		
IC12			LC6543H-4600	IC		
IC13		*	HFE210F002A1	IC		
IC15,16			TC4066BF	IC(BILATERAL SWITCH X4)		
IC17			TC4069UBF	IC(INVERTER X6)		
IC18			NJM4565MD	IC(OP AMP X2)		
IC19-22			M5201FP-71A	IC		
IC23-28			NJM4565MD	IC(OP AMP X2)		
IC29			TC74HC04AF	IC(INVERTER)		
IC30			TC9188F	IC(2CH ELECTRIC VOLUME)		
IC31			TDA1579T	IC(DECODER)		
IC32			NJM4565MD	IC(OP AMP X2)		
Q1 ,2			DTA124EK	DIGITAL TRANSISTOR		
Q3 ,4			DTC124EK	DIGITAL TRANSISTOR		
Q5 ,6			2SB1124	TRANSISTOR		
Q7 ,8			2SD1624	TRANSISTOR		
Q9			2SB1015	TRANSISTOR		
Q10			2SC2412K	TRANSISTOR		
Q11			DTA124EK	DIGITAL TRANSISTOR		

KDC-94R

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Q12 ,13			DTC124EK	DIGITAL TRANSISTOR		
Q14 ,15			2SA1357	TRANSISTOR		
Q16 -18			DTC124EK	DIGITAL TRANSISTOR		
Q19			2SC2412K	TRANSISTOR		
Q20			2SB1015	TRANSISTOR		
Q21			DTC124EK	DIGITAL TRANSISTOR		
Q22 ,23			DTA124EK	DIGITAL TRANSISTOR		
Q24			DTC124EK	DIGITAL TRANSISTOR		
Q51 ,52			2SK669	FET		
Q53			2SA1037K	TRANSISTOR		
Q54			DTC124EK	DIGITAL TRANSISTOR		
Q55 ,56			2SB1307M	TRANSISTOR		
Q57			DTA124EK	DIGITAL TRANSISTOR		
Q58 -60			2SC2412K	TRANSISTOR		
Q61			2SA1037K	TRANSISTOR		
Q62			2SB1124	TRANSISTOR		
Q63 ,64			DTC124EK	DIGITAL TRANSISTOR		
Q65 ,66			2SC2412K	TRANSISTOR		
Q67			DTA124EK	DIGITAL TRANSISTOR		
Q68			DTC114EK	DIGITAL TRANSISTOR		
Q69			DTC124EK	DIGITAL TRANSISTOR		
Q101-104			2SD1757K	TRANSISTOR		
CD PLAYER UNIT (X32-1970-00)						
C1			CK73FB1H103K	CHIP C 0.010UF K		
C2			CC73FCH1H220J	CHIP C 22PF J		
C3			CC73FCH1H020C	CHIP C 2.0PF C		
C4			CK73FB1H103K	CHIP C 0.010UF K		
C5			CK73FB1E473KTA	CHIP C 0.047UF K		
C6			CK73FB1H331K	CHIP C 330PF K		
C7			CK73EB1H223K	CHIP C 0.022UF K		
C8			CK73FB1E273KTA	CHIP C 0.027UF K		
C9			C92-1017-05	ELECTRO 0.47UF 50WV		
C10 ,11			C92-1020-05	ELECTRO 10UF 6.3WV		
C12			CK73FB1H223KTA	CHIP C 0.022UF K		
C13			CK73FB1E273KTA	CHIP C 0.027UF K		
C14			C92-1020-05	ELECTRO 10UF 6.3WV		
C15			C92-1018-05	ELECTRO 1UF 50WV		
C16			C92-1023-05	ELECTRO 22UF 4.0WV		
C17			CK73EB1E104K	CHIP C 0.10UF K		
C18			CK73EF1C105Z	CHIP C 1.0UF Z		
C20 ,21			CK73EF1C105Z	CHIP C 1.0UF Z		
C22 ,23		*	CK73FB1E393KTA	CHIP C 0.039UF K		
C24			CC73FCH1H101J	CHIP C 100PF J		
C25 ,26			CK73FB1H103K	CHIP C 0.010UF K		
C27 ,28			CK73EF1C105Z	CHIP C 1.0UF Z		
C29 ,30			CC73FCH1H330J	CHIP C 33PF J		
C31 -35			CK73EB1E104K	CHIP C 0.10UF K		
C36 ,37			C92-0037-05	ELECTRO 10UF 16WV		
C38			CK73EB1H102K	CHIP C 1000PF K		
C40			CK73FB1E473KTA	CHIP C 0.047UF K		
C41			CC73FCH1H330J	CHIP C 33PF J		
C42			CC73FCH1H220J	CHIP C 22PF J		
C45			C92-0012-05	TANTAL 22UF 6.3WV		
C47		*	C92-0023-05	ELECTRO 1UF 50WV		

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C48			C92-0040-05	ELECTRO 47UF 16WV		
C50			CK73EF1C105Z	CHIP C 1.0UF Z		
C55			CK73FB1E473KTA	CHIP C 0.047UF K		
C60 ,61			CK73FB1E473KTA	CHIP C 0.047UF K		
C65			CK73FB1E473KTA	CHIP C 0.047UF K		
C66			CK73FB1H102K	CHIP C 1000PF K		
C101,102			CK73FB1H221K	CHIP C 220PF K		
C103-106			CC73FCH1H151J	CHIP C 150PF J		
C107-110			CK73FB1H221K	CHIP C 220PF K		
C111,112			C92-0037-05	ELECTRO 10UF 16WV		
C113,114			CK73FB1H182K	CHIP C 1800PF K		
C115			C92-0037-05	ELECTRO 10UF 16WV		
C116			C92-1019-05	ELECTRO 4.7UF 16WV		
C117			C92-1020-05	ELECTRO 10UF 6.3WV		
C118			CK73EB1E104K	CHIP C 0.10UF K		
C120			CK73FB1E473KTA	CHIP C 0.047UF K		
L1			L33-0916-05	SMALL FIXED INDUCTOR		
L2			L33-0935-05	SMALL FIXED INDUCTOR		
L3 ,4			L33-0916-05	SMALL FIXED INDUCTOR		
X1			L78-0505-05	RESONATOR		
X2			L77-2011-05	CRYSTAL RESONATOR(16.9344MHZ)		
R1			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R2			RK73EB2B100J	CHIP R 10 J 1/8W		
R4			RK73FB2A392J	CHIP R 3.9K J 1/10W		
R5			RK73FB2A183J	CHIP R 18K J 1/10W		
R6			RK73FB2A910J	CHIP R 91 J 1/10W		
R7			RK73FB2A241J	CHIP R 240 J 1/10W		
R8			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R9			RK73FB2A134J	CHIP R 130K J 1/10W		
R10			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R11			RK73FB2A123J	CHIP R 12K J 1/10W		
R12			RK73FB2A223J	CHIP R 22K J 1/10W		
R13 ,14			RK73FB2A123J	CHIP R 12K J 1/10W		
R15			RK73FB2A101J	CHIP R 100 J 1/10W		
R16			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R17			RK73FB2A153J	CHIP R 15K J 1/10W		
R18			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R19			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R20			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R21			RK73FB2A155J	CHIP R 1.5M J 1/10W		
R22			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R23			RK73FB2A103J	CHIP R 10K J 1/10W		
R24 ,25			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R26 ,27			RK73EB2B102J	CHIP R 1.0K J 1/8W		
R28			RK73FB2A333J	CHIP R 33K J 1/10W		
R29 ,30			RK73FB2A473J	CHIP R 47K J 1/10W		
R32			RK73FB2A393J	CHIP R 39K J 1/10W		
R33			RK73FB2A473J	CHIP R 47K J 1/10W		
R34			RK73FB2A682J	CHIP R 6.8K J 1/10W		
R35			RK73FB2A221J	CHIP R 220 J 1/10W		
R36			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R37			RK73FB2A474J	CHIP R 470K J 1/10W		
R38 ,39			RK73FB2A103J	CHIP R 10K J 1/10W		
R40			RK73FB2A472J	CHIP R 4.7K J 1/10W		

KDC-94R

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R41			RK73FB2A103J	CHIP R 10K J 1/10W		
R42			RK73FB2A104J	CHIP R 100K J 1/10W		
R43			RK73FB2A224J	CHIP R 220K J 1/10W		
R44			RK73FB2A123J	CHIP R 12K J 1/10W		
R45			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R46			RK73FB2A183J	CHIP R 18K J 1/10W		
R47			RK73FB2A393J	CHIP R 39K J 1/10W		
R48			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R49			RK73EB2B331J	CHIP R 330 J 1/8W		
R50			RK73FB2A473J	CHIP R 47K J 1/10W		
R51			RK73FB2A224J	CHIP R 220K J 1/10W		
R52			RK73FB2A225J	CHIP R 2.2M J 1/10W		
R53			RK73FB2A333J	CHIP R 33K J 1/10W		
R54			RK73EB2B750J	CHIP R 75 J 1/8W		
R56			RK73FB2A391J	CHIP R 390 J 1/10W		
R57			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R58			RK73FB2A331J	CHIP R 330 J 1/10W		
R59			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R61			RK73EB2B472J	CHIP R 4.7K J 1/8W		
R62			RK73FB2A103J	CHIP R 10K J 1/10W		
R63			RK73FB2A100J	CHIP R 10 J 1/10W		
R65 -67			RK73FB2A100J	CHIP R 10 J 1/10W		
R68			RK73EB2B100J	CHIP R 10 J 1/8W		
R69			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R70			RK73EB2B332J	CHIP R 3.3K J 1/8W		
R71 -73			RK73FB2A223J	CHIP R 22K J 1/10W		
R74			RK73EB2B223J	CHIP R 22K J 1/8W		
R75 -77			RK73FB2A223J	CHIP R 22K J 1/10W		
R78			RK73FB2A103J	CHIP R 10K J 1/10W		
R79			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R81			RK73FB2A223J	CHIP R 22K J 1/10W		
R82			RK73FB2A104J	CHIP R 100K J 1/10W		
R83			RK73EB2B104J	CHIP R 100K J 1/8W		
R84 ,85			RK73FB2A104J	CHIP R 100K J 1/10W		
R90			RK73EB2B103J	CHIP R 10K J 1/8W		
R91			RK73FB2A333J	CHIP R 33K J 1/10W		
R92			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R101-108			RK73FB2A562J	CHIP R 5.6K J 1/10W		
R109-112			RK73FB2A123J	CHIP R 12K J 1/10W		
R113-116			RK73FB2A103J	CHIP R 10K J 1/10W		
R117-120			RK73FB2A512J	CHIP R 5.1K J 1/10W		
R121,122			RK73FB2A681J	CHIP R 680 J 1/10W		
R123,124			RK73FB2A104J	CHIP R 100K J 1/10W		
R125,126			RK73FB2A103J	CHIP R 10K J 1/10W		
R127			RK73FB2A561J	CHIP R 560 J 1/10W		
R128			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R130			RK73FB2A682J	CHIP R 6.8K J 1/10W		
R131			RK73FB2A123J	CHIP R 12K J 1/10W		
VR1			R12-6423-05	TRIM POT. 10K		
VR2			R12-6429-05	TRIMMING POT.(100K)		
W1			R92-2052-05	JUMPER WIRE (RESISTOR TYPE)		
W3 -12			R92-2052-05	JUMPER WIRE (RESISTOR TYPE)		
W14 ,15			R92-2052-05	JUMPER WIRE (RESISTOR TYPE)		
W21 -36			R92-2053-05	JUMPER WIRE (RESISTOR TYPE)		
W38 -42			R92-2053-05	JUMPER WIRE (RESISTOR TYPE)		

PARTS LIST

⋇ New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
D2			MA8062	ZENER DIODE		
D3			MA110	DIODE		
D4			MA8091	ZENER DIODE		
D5			MA110	DIODE		
IC1			TA8191F	IC		
IC2			TC9236F	IC		
IC3 ,4			TA8192F	IC		
IC5			TA7291F	IC		
IC6			75P008GB-0B1-3B	IC		
IC7			TC9237F	IC		
IC8 -10			NJM4580E	IC		
IC11			TA78L05F	IC(VOLTAGE REGULATOR/ +5V)		
IC12			TC7SU04F	IC		
IC13			TC74HC74AF	IC(DUAL D-TYPE FLIP FLOP)		
IC14			TC7SU04F	IC		
Q1			2SB624(BV3)	TRANSISTOR		
Q2			2SA1037K	TRANSISTOR		
Q3			DTC124EK	DIGITAL TRANSISTOR		
Q4			DTC114TK	DIGITAL TRANSISTOR		
Q5			DTA124EK	DIGITAL TRANSISTOR		
Q6			2SC2412K	TRANSISTOR		
Q8			2SD1624	TRANSISTOR		
Q9			2SA1037K	TRANSISTOR		
Q10			2SC2412K	TRANSISTOR		
Q11			DTC114TK	DIGITAL TRANSISTOR		
Q12			DTC124EK	DIGITAL TRANSISTOR		
Q13			2SA1036K	TRANSISTOR		
Q14			2SD1624	TRANSISTOR		
Q15			DTA124EK	DIGITAL TRANSISTOR		
Q16 ,17			2SD1757K	TRANSISTOR		
Q18			DTC124EK	DIGITAL TRANSISTOR		
TH1			NT732BTD33K	THERMISTOR		
DAUGHTER UNIT (X89-1222-72)						
C1			CK73FB1H223KTA	CHIP C 0.022UF K		
C2			CE04NW1HR47M	ELECTRO 0.47UF 50WV		
C3			CK73EB1H223K	CHIP C 0.022UF K		
C4 ,5			CK73FB1H223KTA	CHIP C 0.022UF K		
C6			CK73FB1H472K	CHIP C 4700PF K		
C7			CK73FB1H223KTA	CHIP C 0.022UF K		
C8			CK73EB1H472K	CHIP C 4700PF K		
C9			CK73FB1H223KTA	CHIP C 0.022UF K		
C10			CE04NW1C100M	ELECTRO 10UF 16WV		
C11			CK73EB1H473K	CHIP C 0.047UF K		
C12			CE04NW1C100M	ELECTRO 10UF 16WV		
C13			C92-0004-05	ELECTRO 1.0UF 16WV		
C14			CK73EB1H333K	CHIP C 0.033UF K		
C15			C92-0002-05	CHIP TAN 0.22UF 35WV		
C16			CE04NW1C100M	ELECTRO 10UF 16WV		
C18			CK73FB1H471K	CHIP C 470PF K		
C19			C92-0001-05	CHIP TAN 0.1UF 35WV		
C20			C92-0004-05	ELECTRO 1.0UF 16WV		
C21			C92-0003-05	CHIP TAN 0.47UF 25WV		
C22			CK73EB1H473K	CHIP C 0.047UF K		
C23			CK73EB1H223K	CHIP C 0.022UF K		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C24			CK73FB1H223KTA	CHIP C 0.022UF K		
C25			CK73FB1H222K	CHIP C 2200PF K		
C26			CE04NW1C100M	ELECTRO 10UF 16WV		
C27 ,28			CK73EB1H473K	CHIP C 0.047UF K		
C29			CE04NW1C100M	ELECTRO 10UF 16WV		
C30			CK73FB1H221K	CHIP C 220PF K		
C31			CE04NW1H010M	ELECTOR 1.0UF 50WV		
C32			CE04NW1H0R1M	ELECTRO 0.1UF 50WV		
C33			CK73EB1H223K	CHIP C 0.022UF K		
C34			CC73FCH1H220J	CHIP C 22PF J		
C35			CK73EB1E104K	CHIP C 0.10UF K		
C36			C92-0514-05	CHIP TAN 2.2UF 10WV		
C37			CE04NW1A101M	ELECTRO 100UF 10WV		
CF1 ,2			L72-0702-05	CERAMIC FILTER		
L2			L40-2291-31	SMALL FIXED INDUCTOR(2.2UH)		
T1			L30-0711-05	FM IFT		
X1			L78-0506-05	RESONATOR		
R1			RK73FB2A100J	CHIP R 10 J 1/10W		
R2			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R3			RK73FB2A223J	CHIP R 22K J 1/10W		
R4			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R5			RK73EB2B100J	CHIP R 10 J 1/8W		
R6			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R7			RK73FB2A561J	CHIP R 560 J 1/10W		
R8			RK73FB2A331J	CHIP R 330 J 1/10W		
R9			RK73FB2A270J	CHIP R 27 J 1/10W		
R10			RK73FB2A271J	CHIP R 270 J 1/10W		
R11			RK73FB2A331J	CHIP R 330 J 1/10W		
R12 ,13			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R14			RK73FB2A682J	CHIP R 6.8K J 1/10W		
R15 ,16			RK73FB2A103J	CHIP R 10K J 1/10W		
R17			RK73FB2A223J	CHIP R 22K J 1/10W		
R18 ,19			RK73FB2A683J	CHIP R 68K J 1/10W		
R20 ,21			RK73FB2A103J	CHIP R 10K J 1/10W		
R22			RK73FB2A273J	CHIP R 27K J 1/10W		
R23			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R24			RK73FB2A153J	CHIP R 15K J 1/10W		
R25			RK73FB2A152J	CHIP R 1.5K J 1/10W		
R26			RK73FB2A751J	CHIP R 750 J 1/10W		
R27			RK73FB2A103J	CHIP R 10K J 1/10W		
R28			RK73FB2A133J	CHIP R 13K J 1/10W		
R29			RK73FB2A100J	CHIP R 10 J 1/10W		
R30			RK73FB2A102J	CHIP R 1.0K J 1/10W		
VR1 ,2			R12-3685-05	TRIMMING POT.(10K)		
VR3			R12-3100-05	TRIMMING POT.(10K)		
W1 ,2			R92-2053-05	JUMPER WIRE (RESISTOR TYPE)		
W4			R92-2053-05	JUMPER WIRE (RESISTOR TYPE)		
D1			MA110	DIODE		
IC1			KKC02	IC		
Q1			DTC124EK	DIGITAL TRANSISTOR		
Q2			2SC2413K	TRANSISTOR		
Q3			DTC124EK	DIGITAL TRANSISTOR		
Q4			DTA124EK	DIGITAL TRANSISTOR		
Q5 ,6			2SC2412K	TRANSISTOR		

PARTS LIST

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Q7			DTC124EK	DIGITAL TRANSISTOR		
TU1	1E		W02-1282-05	FM/AM FRONT-END		
MECHANISM ASSY (X92-1460-01)						
1	2D		A10-2019-43	CHASSIS CALKING ASSY		
2	3A		A10-2037-62	CHASSIS CALKING ASSY		
3	1C		A10-2039-63	CHASSIS CALKING ASSY		
6	3C		D10-2546-04	ROD		
7	2A		D10-2552-14	ARM ASSY		
8	2A		D10-2554-14	LEVER		
10	2D		D10-2559-24	LEVER ASSY		
11	1D		D10-2565-24	LEVER ASSY		
12	1D		D10-2568-24	LEVER		
13	1D		D10-2570-14	LEVER		
14	3B		D10-2571-24	LEVER ASSY		
15	3B		D10-2574-24	LEVER ASSY		
16	2A		D10-2576-23	LEVER ASSY		
17	3A		D10-2578-24	LEVER ASSY		
18	3A		D10-2581-24	LEVER ASSY		
19	3A		D10-2583-14	LEVER		
20	2B		D10-2584-24	LEVER ASSY		
21	1D		D10-2586-44	SLIDER ASSY		
22	3A		D12-0601-23	CAM		
23	2B		D12-0602-23	CAM		
24	2C		D13-1029-24	GEAR		
25	2C		D13-1030-14	GEAR		
26	3D		D13-1032-24	GEAR ASSY		
27	2A		D13-1033-44	GEAR ASSY		
28	2A		D13-1036-04	GEAR		
29	2A		D13-1037-33	LACK (GEAR)		
30	2A		D13-1038-04	GEAR		
31	2B		D13-1039-14	WORM		
32	1A		D13-1041-04	GEAR		
33	1A		D13-1042-24	GEAR		
34	1A		D13-1043-04	GEAR		
35	2A		D13-1044-14	GEAR		
36	1A		D14-0608-04	ROLLER		
37	1C		D14-0609-14	ROLLER		
38	2A		D14-0610-03	ROLLER		
39	2B		D23-0905-14	RETAINER		
40	1D		E31-8116-15	WIRING HARNESS		
40A	3D		F31-0704-04	REINFORCING HARDWARE		
41	1C		G01-2526-04	TORSION COIL SPRING		
42	1B		G01-2531-14	EXTENSION SPRING		
43	2B		G01-2532-24	EXTENSION SPRING		
44	1D		G01-2533-14	EXTENSION SPRING		
45	1C		G01-2534-14	EXTENSION SPRING		
46	3A		G01-2535-04	EXTENSION SPRING		
47	3C		G02-1111-24	FLAT SPRING		
48	3D		G02-1112-34	FLAT SPRING		
49	3C		G02-1129-04	FLAT SPRING		
50	3A		G02-1115-14	FLAT SPRING		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
51	1C		G02-1116-14	FLAT SPRING		
52	1C		G02-1117-04	FLAT SPRING		
53	2A		G02-1120-14	FLAT SPRING		
54	2D		J02-1201-13	INSULATOR		
55	2C		J11-0601-23	CLAMPER		
56	2C		J19-4336-53	HOLDER ASSY		
57	3D		J19-4338-34	HOLDER		
58	3D		J19-4339-33	HOLDER		
59	3C		J19-4340-23	HOLDER		
60	1A		J19-4349-33	HOLDER		
61	2D		J19-4350-03	HOLDER		
62	3A		J21-7102-34	MOUNTING HARDWARE ASSY		
63	2B		J21-7104-54	MOUNTING HARDWARE ASSY		
64	2A		J21-7106-24	MOUNTING HARDWARE ASSY		
65	2A		J21-7109-23	MOUNTING HARDWARE		
66	1A		J21-7110-13	MOUNTING HARDWARE		
67	2C		J30-1001-24	SPACER		
68	1C		J90-0706-34	GUIDE		
69	1A		J90-0707-22	GUIDE		
A	1C		N19-2022-04	FLAT WASHER		
B	1D		N19-2023-04	FLAT WASHER		
C	1C		N39-2025-46	PAN HEAD MACHIN SCREW		
D	3C		N39-2020-46	PAN HEAD MACHIN SCREW		
E	2C		N09-4023-05	MACHINE SCREW (M2X3)		
F	1A		N09-4043-05	MACHINE SCREW		
G	1A		N80-2004-46	PAN HEAD TAPTITE SCREW		
H	2C		N09-1299-05	SEMS (MACHINE SCREW)(M2X4)		
J	2C		N80-2008-46	PAN HEAD TAPTITE SCREW		
K	3D		N09-1890-05	TAPTITE SCREW (1.7X3.5)		
L	1A		N19-0891-04	FLAT WASHER		
M	2A		N19-2007-04	FLAT WASHER		
N	2A		N19-2021-04	FLAT WASHER		
P			N19-2025-04	FLAT WASHER		
Q	1C		N39-1720-46	PAN HEAD MACHIN SCREW		
R			N39-1728-46	PAN HEAD MACHIN SCREW		
S			N39-1740-46	PAN HEAD MACHIN SCREW		
U	3D		N39-1718-46	PAN HEAD MACHIN SCREW		
S1	1D		S40-1112-05	PUSH SWITCH		
M1	3C		T42-0715-24	MOTOR ASSY		
M2,3	2B		T42-0704-15	DC MOTOR		
⚠ PU1	3D		T25-0201-05	OPTICAL PICKUP HEAD		
SL1	2A		T94-0403-05	MAGNETIC PLUNGER		
			SWITCH UNIT (W02-1298-05)			
L1 -7			B30-1349-05	LED		
L8			B30-1306-05	LAMP (GREEN)		
L9			B30-1305-05	LAMP (AMBER)		
L10			B30-1306-05	LAMP (GREEN)		
L11			B30-1305-05	LAMP (AMBER)		
L12			B30-1349-05	LED		
C1 ,2			CK73EB1H681K	CHIP C 680PF K		
C3 ,4			CK73EF1E224Z	CHIP C 0.22UF Z		

⋇ New Parts

PARTS LIST/ERROR MESSAGE

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
R1 -6			RK73EB2B331J	CHIP R 330 J 1/8W		
R7			RK73EB2B471J	CHIP R 470 J 1/8W		
R8 ,9			RK73EB2B513J	CHIP R 51K J 1/8W		
R10			RK73EB2B471J	CHIP R 470 J 1/8W		
S1 -11			S40-1606-05	PUSH SWITCH		
S12 ,13			S40-1607-05	PUSH SWITCH		
S14 ,15			S40-1606-05	PUSH SWITCH		
S16 -18			S40-1607-05	PUSH SWITCH		
S19 ,20			S40-1096-05	PUSH SWITCH		
S21			S40-1607-05	PUSH SWITCH		
S22			S40-1606-05	PUSH SWITCH		
S23			T99-0403-05	SPEED DETECTOR (VOL.)		
IC1 ,2			LC7582A	IC(LCD DRIVER)		

Error Message

When the KENWOOD CD-changer is connected, this unit displays various error indications to show the following messages.

ER-00: The CD-changer control output is not connected.
ER-01: No disc magazine in the changer, or the magazine is not set completely.
ER-02: No discs in the disc magazine.
ER-03: The specified track is not present on the disc.
(Example: This appears when the 15th track is specified for a disc on which only 10 tracks are contained.)
ER-04: Disc is too dirty.
Condensation has occurred on the disc, or water drops are on the disc.
Disc is set upside down.
ER-99: Operation incorrect due to something being defective.
Press the Reset button on this unit.
If the "ER-99" indication does not disappear with this operation, consult your nearest KENWOOD Service Agent.
ER-0D:
- When the temperature exceeds 60°C, the protection circuit is engaged to stop any operation. At this time, this indication will appear.
- Open a window or turn the air-conditioner ON to lower the temperature. After a while, this indication will go out.
- This indication also appears for several seconds when making connections, or when the Reset button is pressed.

ER-0E: This is displayed when the condition of "ER-0D" is released.
LOAD: This indication appears while a disc is being changed inside the changer.

CAUTION: Random play, Track/Disc repeat or Track/Disc scan cannot be initiated while the load indication is displayed.

* When no indicator appears in this unit and only illumination appears, the cable connector may nearly be disconnected.

KDC-94R

SPECIFICATIONS

Disc Section

Laser Diode	GaAlAs (λ = 780 nm)
Digital Filter (D/A)	8 Times Over Sampling
D/A Converter	1 bit (with D.P.A.C.)
Spindle Speed	500 ~ 200 rpm (CLV)
Wow & Flutter	Below Measurable Limit
Frequency Response (±1 dB)	5 Hz ~ 20 kHz
Total Harmonic Distortion (1 kHz)	0.005%
Signal to Noise Ratio	96 dB
Dynamic Range	96 dB
Channel Separation	85 dB

FM Tuner Section

Frequency Range	87.5 MHz ~ 108.0 MHz
Channel Space	50 kHz
Usable Sensitivity	12.0 dBf (1.1 μV/75 Ω)
50 dB Quieting Sensitivity	15.2 dBf (1.6 μV/75 Ω)
Frequency Response (±1 dB)	30 Hz ~ 15 kHz
Signal to Noise Ratio (IEC-A)	70 dB
Selectivity (DIN)	70 dB
Capture Ratio	1.5 dB
Stereo Separation (1 kHz)	40 dB

MW Tuner Section

Frequency Range	531 kHz ~ 1611 kHz
Channel Space	9 kHz
Usable Sensitivity	27 dBμ

LW Tuner section

Frequency Range	153 kHz ~ 281 kHz

Audio Section

Tone Action	Bass: 100 Hz ± 8 dB Treble: 10 kHz ± 8 dB
Preout Level	1.0 V

General

Operating Voltage	14.4 V (11 ~ 16 V)
Current Consumption	1.2 A
Operating Temperature	−10 ~ 50 °C
Installation Size (W × H × D)	180 × 50 × 170 mm (7-1/16 × 1-15/16 × 6-11/16 in)
Weight	2.1 kg (4.6 lb)

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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